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The American Farmer.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

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Agricultural Science—Its Position and Prospects in America.

An Address by Dr. M. G. ELLZEY, before the Farmers' Convention of Baltimore County.

I suggest to you a few thoughts and reflections upon the subject of Agricultural Science—its position and prospects in America. It is impossible to attempt exhaustive treatment of so great a subject in a brief essay.

First, we will define the true scope of agricultural science, and then pass in review the great agencies upon which we have relied, and must rely, to bring up agriculture from the position of a rude art to the foremost position among the scientific pursuits of men, where it belongs. These agencies are: 1, the press. 2, the colleges. 3, State experiment stations and departments. 4, the national department. 5, agricultural societies.

Agricultural Science.

The notion has widely prevailed that agricultural science is a kind of chemistry, mainly consisting of analyses and recipes. The original works upon the subject were called "Agricultural Chemistries."

We now begin to perceive that agriculture rightly understood is a very complex art, based upon a concrete science. I mean by that, a science made up of parts and parcels, facts and principles, of many different sciences, wrought together with a homogeneous body of knowledge, systematically arranged with a view to its utilization in practical farming. Medicine affords an excellent basis of comparison, for it too is a complex practical art, based upon a concrete science, made up of parts and parcels of many sciences, wrought together with a homogeneous body of knowledge, systematically arranged with a view to its utilization in the practice of medicine. Let us have patience, my friends, and try to get at what we mean by agricultural science. Do not try to go somewhere with only the faintest notion of where we are trying to go. Be assured that agricultural science is something *greatly more* than a kind of chemistry. I apprehend that if any of us had the small-pox we should not send for a chemist to analyze our pustules and give us a recipe, and I apprehend if we did the chemist would not come. We should comprehend and he would comprehend that medicine is something more than a kind of chemistry; yet a physician wholly ignorant of chemistry could scarcely avoid poisoning not a few of his patients. The truth is that chemistry is neither agriculture nor medicine, but it is the pure science most important to both. It occupies the same relation to the scientific concrete that the gas tar does to the pavement concrete. The farmer, like the physician, deals with living organisms—plants and animals. You need not be surprised then if we find the same sciences contributing to the formation of a comprehensive system of agricultural and of medical science.

What is it that the scientific farmer wants to know? He wants to know how plants feed and how they grow, and how animals feed and how they grow, and how they reproduce their kind. A mere chemist is very apt to know nothing about those things. In order to know how plants feed and how they grow we must know first what they feed on, and then what they feed with; we must know what organs they have for the absorption of their food, and how they absorb it, and what they do with it to make vegetable tissue out of it. We must know the structure and the functions and uses of all the different parts or organs of plants; we must know their anatomy and their physiology. So of animals.

John Doe wants to make butter for the Baltimore market. Two things are necessary—a cow and her rations. The chemist can analyze the ration and give a recipe, but he cannot analyze the cow, nor tell John Doe how to make her. In order to judge well of a milch cow he must know all about the history of breeds and the breeding of families; the structure and functions and mutual relations to each other, and to the various parts of the different sorts of food, of all those parts of the cow concerned in the conversion of corn meal and bran and clover hay into "gilt-edge" butter. A scientific farmer, then, must know besides chemistry, animal and vegetable anatomy and physiology. Chemistry, anatomy, physiology! Why they teach them at

the medical colleges! Yes, truly, and they will have to teach them at the agricultural colleges, too, before they come to be of any account. Those who have set up to teach agricultural science have been trying to go somewhere without knowing where they wanted to go. There is scarcely any science which does not contribute facts and principles to the concrete of which a true science of agriculture is and must be composed. They who have written of the subject have failed to comprehend it in its true light. The whole subject of the conversion of the products of the earth into animal products is ignored, yet it is the leading branch of the business. I say, then, that agricultural science is a concrete science, arranged with reference to its utilization in the practical art of culture, and in the live stock business in all its branches. The contributing sciences are chiefly chemistry, anatomy, physiology, botany, zoology, mineralogy and geology. Latin, Greek and transcendental mathematics contribute nothing to it.

But what is the ultimate end of agricultural science? Is it not to teach men how they may devise a SYSTEM of farming adapted to the situation in which they may be placed, which shall in practice yield a living profit, while instead of exhausting it shall improve the land? That is the kind of agricultural science I am trying to talk about. To carry forward that sort of science in agriculture, I have said, we depend mainly on the press, the colleges, the experiment stations and departments, clubs and societies.

Agricultural Journalism.

If we compare the leading journals of agriculture with those of medicine, (and I am in a position to do that intelligently,) we shall find that the scientific articles of the former are generally fully equal in merit to those of the latter. It is not to be denied, and I do not deny that both contain much trash. But I do say that the merit of our best agricultural journals is of a very high order, and it is very certain that they have outgrown the idea still prevalent about the colleges, departments and stations, that agricultural science is only a sort of chemistry. They have hitherto done far more than these institutions in leading the public mind to a comprehension of what a true agricultural science is or ought to be. But when we come to standard works we find medical science possessed of a boundless wealth of literature of this class, of the very highest type of ability, whereas agricultural science is in this respect completely sterile. We have a very few works of merit on special topics, but *not one* even pretending to attempt a comprehensive view of the subject.

It is now likely that a decade will do more for us in this direction than all time has done heretofore. As soon as we have a creditable standard literature affairs will assume a new aspect. It is indeed remarkable that the periodical literature of agriculture has achieved so brilliant a position, so far in advance of a standard literature, or of schools or colleges worth a cent.

Agricultural Colleges.

I come now to the colleges. You already perceive that I have no great opinion of them. I have no purpose to deal out to them any unfair or malicious criticism. When I say that they have failed to meet public expectation, I say simply what everybody knows. They have been for the most part agricultural colleges only in name —*that everybody knows.* Undoubtedly radical mistakes have been made in their organization and management, or they could not have been in the outcome so bad and so worthless for the purposes for which they were designed, as, undoubtedly, they have been. Now, why is this? First, their endowment has been insufficient. It takes a great deal of money to run a school of applied science, and most of the agricultural colleges have had very little. A school of agriculture is, or ought to be, a school of applied science, or it will and must be something *worse than nothing.* Now our American agricultural colleges for the most part certainly have not been schools of applied science, and therefore it is true that they have been for the most part something worse than nothing. Has anybody tried to make them schools of applied science? I think not; for no one seems to have known or thought they ought to be schools of that sort. Look at the schools of medicine: superb, well nigh perfect, as they are. There is no modern educational institution which can compare with a first-class medical college. I say that deliberately, and I know what I am talking about. I say it again, there is no modern educational institution which can compare with a modern medical college, in the perfection of its methods, or the excellent results of its work. There is no other school which sends out graduates so fit to enter upon the life-work for which their school-work is, or ought to be, preparatory. Why this great difference? Why do the medical colleges stand first among modern schools, and why do the agricultural colleges stand last, and a great way behind those that stand next to last? In the first place, medical colleges are managed, and their teaching work is done by *Doctors.* Not by M. A's, D. D's, L.L. D's—who, if they know little of medicine, know far less of farming as a business or a science. They know nothing of agriculture at all, and care less for it. How can they teach it? The knowledge which pertains to the Master of Arts course of our universities is of less use about a school of applied science, and especially of agricultural science, than almost any other important knowledge within reach of the human mind. To put a man of purely literary culture, and with no practical experience of affairs, at the head of an agricultural college is a flagrant abuse of common sense. It is this very folly which has ruined the reputation of so many gentlemen, and destroyed so many promising enterprises, and gone so far towards bringing contempt upon scientific agriculture itself. If John Doe knows nothing about agricultural science, certainly he cannot teach Richard Roe anything about it. It is universityism in the common schools which has made such a mess of primary education. It is universityism in the agricultural colleges which has made of them something *worse than nothing;* whereas, universityism has been kept out of the medical colleges, and therefore they are a success.

Furthermore, politics have cast a blight upon these colleges, as they have been run and operated as a part of the "machine." I am not going

to discuss political or partisan questions here, but I am going to say that politics have ruined these colleges. No man can deny that who knows the truth. Endowed by public funds, the Managing Boards have been selected by the Governor of a State, by and with the "*courtesy* of the Senate." So the Board is itself a political body. The methods of the politician being thus thrust under the very foundations of the so called agricultural schools, "*Fœdum inceptu, fœdum exitu.*" Those acquainted with the Latin will recognize in "*fœdum*" a strong term, but not too strong for American politics. Foul in origin, nasty in outcome. Politics are to colleges what dead flies are to the ointment of the apothecary. So the Managing Boards have been made up of lawyers, political ex-parsons, (with sore throats,) newspaper editors—of all science quite ignorant; old stump speakers—more ignorant still; possibly one farmer, with political aspirations, thrown in for the name of the thing.

I have known more than one Professor of Agriculture who had no rational conception of what agricultural science was; who could not name nor tell the nature and qualities of one sort in ten of the common grasses of the field; nor tell a Dutch cow from a Short-Horn; analyze a sample of gypsum; nor tell the difference between a thoroughbred horse and a Morgan; nor why ploughing land wet enough to puddle the clay injured it. Those professors were political expedients. The majority of the Managing Boards should always be composed of enlightened agriculturists. The faculties should be composed exclusively of scientific men. Latin, Greek and transcendental mathematics should be expelled from the premises. The President should be: 1st.—A man of sense. 2d.—A man of business experience and capacity. 3d.—A man of general scientific information and special reputation in some branch of science. This President should be suffered and required to run the school, for it is not possible to compose any Board of Visitors who can do that. If the President fails, require him to vacate and put in one who will not fail. Do not make a political ex-parson the President, for "having put his hand to the plough and looking back, he is not fit."

The model farm should be organized and equipped for the purpose of illustrating a practical system of scientific agriculture, and the best and most advanced and improved modern implements and methods of culture. In connection with it and the laboratory, under the direction of first-class talent, a thoroughly modern experiment station should be conducted.

As to manual labor, none of it. If I had to erect a monument to Folly, I would make it a half time manual labor school, so called, where no work was done; where none of the teachers knew how to work. The curriculum mainly Latin, Greek and transcendental mathematics. A little soldiering thrown in for good measure. An annual oration by an effete old stump speaker, who never did a stroke of work in his life, on The Dignity of Labor. And call that thing an agricultural college! An agricultural college is no more than a medical college, a place to maul or a place to dig. It is not a place, on the one hand, to learn A. B. C., nor, on the other, to learn Latin and Greek. It is a place to learn agricultural science, or it is, as I have said, and I say it again, *worse than nothing.* The common school is the place for A. B. C. If you want to learn A. B. C. go there, or let your mother teach you. The university is the place to learn Latin, Greek and transcendental mathematics and moral philosophy; if you want to learn them go there. If you want to learn soldiering or sailoring go to West Point or Annapolis. If you want to learn agricultural science go—God knows where! If there is an agricultural college in America, go there! Some day we shall have agricultural colleges. It can not now be long first; then will follow in due time a standard literature, and then agriculture will come to be known as a scientific pursuit. After that it will be plain sailing.

Agricultural Experiment Stations and Departments.

The fundamental idea of agricultural experiment stations is a good one. The inductions upon which the general propositions of the science depend need verification. Seldom, as yet, do the general principles of the science rest upon particular facts accepted on all hands.—Our science is yet in its formative stage. Each experiment, repeated tests, verifications for particular localities, afford ample scope for the greatest activity in original research. Long years, yea, centuries will yet elapse before all is complete. The stations have for the most part confined themselves too much to laboratory work. They have in so doing, in my judgment, made a capital mistake. The mere routine analyses of commercial manures has occupied some of them mainly or exclusively, and they have amused themselves, and perhaps others, by publishing every now and then a list of their analysis and valuations of manures. Now, inasmuch as the value of these articles depend on the form in which their valuable constituents exist, as well as upon their relative quantities, and, further, inasmuch as no method is known whereby the actual source of the nitrogen and phosphoric acid these articles contain can be determined, therefore it is plain they cannot be valued from the data furnished by analysis. But if the actual values can not be determined, it is foolish to say the comparative values can be. If the actual values of each of three substances are known, their comparative values are also known. But if No. 1 *may be* worth two, four, six or eight dollars, and if No. 2 *may be* worth three, five or seven, and No. 3 *may be* worth seven or ten dollars, what may be the comparative values of the three? But how does it actually work in practice? Let us refer to Bulletin No. 49, Connecticut Agricultural Experiment Station, and see what we there shall find. We find eleven samples of commercial fertilizing stuff analyzed and *valued.* We find *everyone* of them *valued* higher than they are sold by the manufacturer. Four samples of horn, fish scrap and dried blood are *valued* at an average excess over their selling price of $9.41 per ton, greatest excess $13.71 per ton. Five samples of ground bone; average excess $11.91, greatest excess $23.44. Two samples of potash salts; average excess $6.57, greatest excess $6.91. Now, my friends, what is to be said of a system which yields results so fallacious, so mis-

leading in the hands of the ablest agricultural chemist of America? Is that a proper basis for the enactment of legal restraints and the building of bureaus? I tell you it is mainly a game of poor puss wants a corner. Analysis does furnish data upon which gross frauds may be detected. But I deny that it furnishes data from which correct, or approximately correct, valuations may be obtained. It is not by deceptions and false pretenses that agricultural science can be advanced. There is plenty of legitimate work for the stations, and more than they can by any possibility do without going into any such business as this. As long as their main efforts are directed abortively towards the regulation of the trade in fertilizers, their legitimate and proper work, the advancement of agricultural science, will and must be neglected. It is a perfectly absurd and ridiculous thing to call a chemical laboratory in the heart of a city an agricultural experiment station. The pretence that field experiments are of no value in the determination of agricultural problems put forward by chemists or by analyses, who may or may not be chemists, is the most obvious foolishness. It is only by field experiments that the deductions of the laboratory can be put to the test of verification. The experiments and results of the laboratory are suggestive, the experiments and results of the field are decisive. Co-operating thus they are capable of great achievements; at variance and strife they do no good, and only serve to confuse the judgment of our learned men, and bring science into contempt. The only true model of a real agricultural experiment station in the world is the experimental farm of Mr. J. Lawes at Rothamstead, England. In the model farms of the agricultural colleges we have the embryos of similar stations for most of the States. When fertilized with the germs of a little common sense they will begin to develop into something of some account.

Hitherto we all know what the average college farm has been. A sink hole for money. A carcass to be battened on by local rings. A place to carry out the whims and follies of politicians, and printers, and lawyers, and ex-parsons, and stump speakers, and demagogues, and dead beats; each and every of whom knows precisely "what the farmers want." Whenever "a fellow of that kidney" begins to "know what the farmers want," you may swear to it that he wants something himself. Born hewers of wood and drawers of water, these farmers will persist in elevating and honoring those who despise them. I say that the college farm is usually a curiosity in the way of an example of scientific agriculture. No system of agriculture is illustrated by it. No trace of any system of any sort is discoverable in its management. It costs about four thousand dollars a year upon an average to run it at random in a manner and style far below the practice of the good farmers of the neighborhood, illustrating nothing but extravagance, and jobbery, and folly. Is it not a pity that some man of sense, and influence and scientific reputation, cannot be found to take hold of one of these concerns and show the people what it is that they have been trying to do? Some day that will happen. What the laboratory is to the teaching of chemical science, that the college farm ought to be to the teaching of agricultural science. The very obvious proposition that the department of practical scientific agriculture should be separate from experimental culture does not seem to have occurred to anybody. What is the use of agricultural science as taught in the lecture room, but to demonstrate a system of farming upon scientific principles to be practicable and profitable? And what is the use of the model farm but to exhibit such a system in practical operation, a teaching example to the public? Unless a man is capable of devising and explaining such a system, he is not fit to be the President of an agricultural school—certainly he is not a competent Professor of Agricultural Science. It is indubitably certain that if there be any class of men more ignorant than all others of all such things, it is the class of that peculiar culture implied by the degree, "Master of Arts." It remains for the farmers to demand that these institutions shall be taken out of the hands of incompetent men and placed upon a proper footing. They can do it if they will do it, and if they won't do it they can only blame themselves. They have the majority of votes.

The national statistics show undisputably that the agriculture of this country is an universal system of spoliation and plunder, and ruin of the national domain; devastating the inheritance of posterity, and sapping the foundations of national power and prosperity. This thing is done in ignorance rather than in malice, and it is the office of agricultural science to fasten public attention upon the evil and demonstrate the remedy. It is surely true that agricultural science is something greatly more than a lot of analyses and recipes. If it cannot establish that a system of farming is practicable, which will afford the farmer a living, without destroying the value of the soil, it is unworthy of attention by a man of sense. What is this generation, boasting of the splendor of its achievements and the glory of its civilization, doing? Go down to that horrible pit, the Baltimore basin, and smell the noisome stink that poisons the air, and reflect that year by year and every year we are sending to waste, through the water closets and sewers of the cities, millions upon millions of dollars worth of the fertility of our soils. The earth beneath our palatial houses is reeking with rottenness and filth; the air about them deadly with poisonous contagions and miasms, and the water we drink, and wherein we wash and cook our food, "smells rotten and tastes fishy," does it? I should say it did. "Contains organic matter" is the polite way the chemist puts it. Aye, my friends, the meaning of that is that in these hot days the water of your great cities is foul and thick with festering filth, mainly composed of the drippings from the water closets. Healthy, do you say? Do you say our cities are healthy? Do you know that of every one hundred children born therein, not far from fifty die before they are five years old. Yet in the well known Stamford patent carbon process we have an easy and safe method of recovering this wealth for our soils, disposing of this poisonous filth, by the effectual process of destructive distillation or cremation; without a bad smell or a miasm anywhere from the closet to the finished product, ready for application to the crops; and money may be made out of the whole transaction, yet with owl like solemnity

our Boards of Health, our Sanitary Commissions, meet and raise committees, and dissolve; our agricultural societies meet, and discuss, and separate, and things go on as they were. Nothing stands in the way of this great reform but the inherent laziness and nastiness of mankind, backed up by the unmeasurable ignorance of the average American politician and public man of every thing which he ought to know. I have spoken too long, and I have left myself little time to speak of the

National Agricultural Department.

Of that department the first thing that I think it worth while to say is that it has been hitherto of no account. Of the present Commissioner I do not wish to speak any evil. I am a southern man; a democrat of the democrats; after the most straightest sect, I am a democrat. General Le Duc is on the other side to all that. In my composition is no blarney. I am a downright plain man, who neither hesitates nor fears to criticise public men and public measures, and having no axe to grind, equally disregard the smiles and frowns of the great. I think that General Le Duc is the best Commissioner the Department ever had, but the organization of the Department is so defective, and the appropriation so small that no man can do much with it until it is reformed and properly supported. Again, then, why do not the farmers let their representatives in Congress know *that this thing has to be done?* To remove the Commissioner and all the experts of the Department at the end of every four years, when they can only have begun to be broken in to their duties, is to insure that the Department will never be worth anything to the people of the country, and will never, as it ought to, be the lead in agricultural development. If agriculture and commerce need Cabinet Ministers, as some think, give them each one, abolishing that non-descript, the Interior, and disencumbering the Treasury of its absurd connection with trichinosis and murrain. But in connection with the Agricultural Department give us, nevertheless, a great National Agricultural Experiment Station, with a permanent chief and scientific corps, with ample funds and sufficient land at the seat of Government to make all needful and useful experiments, both with regard to breeding, feeding and rearing animals, and in every improved method of culture, and the practical workings of improved implements. This station should not lack funds to employ any scientific man in the world, who might be necessary to its purposes. The State colleges, endowed by federal funds, should be corresponding and contributing stations. Such would be an establishment commensurate with the dignity of the foremost and most progressive of modern nations. Its vast usefulness would extend not only to every remote community in this great country, but throughout all lands inhabited by civilized man.

Societies such as I have the honor to address have done and are doing a great work in the cause of agricultural improvement, of which I cannot now take time to speak.

The last topic I suggest to your notice, in a few brief words is

Co-operation.

Thoughtful, earnest, dignified, unselfish co-operation between all who desire to see the light of exact, tested, verified knowledge, that is of scientific knowledge thrown upon the line of progress of this great pursuit, so that in the face of the intense and all-pervading competition of modern life it may so improve its methods and systematize its practice, as to obtain with precision the greatest and promptest possible returns for money, labor, skill, time, invested, without impairing, but on the contrary improving, the permanent investment the soil. Co-operation alone can lead us to that grand achievement. Co-operation between press and colleges, departments, stations and societies. Co-operation between people and their representatives and public servants. Co-operation between the learned man of science and the unlearned man of practice; between the capitalist and the laborer. Thus, and not otherwise, can agriculture be promptly advanced to its rightful position, foremost among the scientific pursuits of men.

Each helping each,
Skilled countless hands shall work forever;
For naught its power to strength can teach,
Like emulation and endeavor.

Thus linked the master to the man,
Each in his RIGHTS shall each revere;
And while we march in freedom's van,
Scorn the lewd rout that dogs the rear.

Ensilage.

A paper written by CHAS. K. HARRISON, of Baltimore Co., for and read before the Baltimore County Farmers' Convention, May 11, 1881.

I have been asked by your committee of arrangements to bring to your notice the claims ensilage has for adoption in Baltimore county.

Many of you are aware, through the agricultural press of the country, how much interest this question has excited for some years. Extravagant claims have been published in its favor, and its introduction injured considerably with the steady, sober-minded public, who view with distrust any system too extravagantly lauded.

Theorists and some practical men have decried it, but I have never read any argument against its economy urged by any practical man who *had* tried it, and I have yet to hear of one who has, and abandoned it.

The important question for farmers in Baltimore county to ask themselves is—"Have they need of, for winter feeding, greater facilities than they now enjoy?" Would a system be desirable for them that enabled nearly all the hay to be sold and double the ordinary number of cattle to be kept, thus increasing the manure heap, that *Sheet Anchor* of all successful husbandry?

In the present day of Western competition through cheap freight rates, perishable produce, or such as is too bulky to come into market from great distances, is what you will have to turn your attention to principally. Therefore, milk, butter and hay should and *do* very largely occupy your attention. For the profitable production of the two first, when prices are at their maximum, you have a long winter to contend with,

during which time cattle have to be confined almost exclusively to dry food—for the number of those who have any succulent food, such as sugar beets or mangel wurtzel, to resort to, is very limited; hot weather and the uncertainty of these crops, together with the attention they demand during our busy season of harvest, will always cause them, in Baltimore county at least, to be of doubtful economy.

The question still presents itself—"In what manner and by what means can you provide a quantity of succulent food for winter consumption; food which will not only produce excellent milk and butter, but leave you free to take advantage of your proximity to the great market of Baltimore and dispose of all you have, and yet maintain the productive power of your farms?"

Recognizing the difficulties you have to contend with in the face of the competition I have cited, and fresh and virgin soil pouring upon you vast quantities of cereals, your own lands being in no condition to contend against such odds, I would suggest your turning your attention to the production of milk and butter, of *fine quality*, and the feeding of *choice* steers for market.

The great drawback to the successful prosecution of such a system is the high price of hay or bulky food, costing as it does from three-quarters of a cent to a cent a pound. Now ensilage will not cost you more than one-tenth of a cent per pound, a daily ration for a cow will cost you four cents; hay at three-quarters of a cent per pound would cost you sixteen cents, not less, per day. But farmers who in these dry seasons that we experience cut two tons of hay per acre secure a large crop, and yet this would supply a cow with but long food enough for two hundred days; an acre of ensilage would feed six cows during the same period; the long food for your cow fed on hay would cost you $32.00 for the two hundred days—ensilage sufficient for one cow during the same time would cost you but $8.33⅓.

This estimate of what an acre will furnish food for is based upon a yield of say twenty-four tons of ensilage to the acre, an amount I have had no difficulty in obtaining. It is of no moment to you how much your corn fodder weighs when hauled in from the field; what you desire to know would be the amount of ensilage you could procure from an acre of land, and to do this divide the number of tons your silo contains by the acres of fodder it takes to fill it, and this will give the yield of ensilage per acre.

The weight of a cubic yard of compressed ensilage is fifteen hundred pounds. I am familiar with many experiments made during the winter of 1881 and previously, to ascertain the correct weight. Some have found a cubic foot to weigh forty-five pounds, others sixty-five; the mean between these two, of a fraction under fifty-six, gives fifteen hundred pounds as the weight per cubic yard, which agrees closely with some of the experiments abroad. I believe that the quality of the ensilage and effective consolidation has much to do with a heavy weight per cubic yard.

So much depends upon this question of quality that no rule can be laid down in regard to the amount an animal should consume. In some recent experiments ensilage from one silo was proved to contain in eighty pounds as much feeding material as an adjoining one contained in one hundred and twenty pounds.

There have been doubts cast upon the fitness of ensilage for the production of first-rate butter, but in a recent bulletin from the New Jersey Experimental Station, Professor Cook says "butter made from it being, to his knowledge, of unusually fine color and flavor."

He remarks also "that the carbo-hydrates, substances very essential to herbiverous animals, and constituting the bulk of their food, can be obtained in ensilage much cheaper than in any food known to us at present."

The method to be pursued in raising the greatest quantity and very best quality of ensilage has not yet been determined upon, although for a number of years experiments to ascertain this have been in progress. The most careful, elaborate and thorough of these are now being carried on in Tennessee, and one series have been published; but in consequence of the first set being instituted to obtain the yield from certain fertilizers, further time is yet needed before the amount of seed and distance in the row is determined upon in order to secure the greatest yield consistent with that maturity which gives an *ear* of *corn* on almost *every stalk*.

I visited last month, in an adjoining State, the farms of three different persons who had fed two hundred and fifty six steers upon this preserved fodder; they had wintered splendidly, and some that had received no shelter during the entire winter had gained considerable weight, and consumed no more grain than it is usual to feed. I have had now an experience of three years in feeding corn fodder packed in silos, and was induced to try it mainly through the enterprise of the *American Farmer* in publishing the accounts of experiments in France. During the winter I have through its use fed my stable of sixty cows six dollars a day cheaper than I have ever been able to accomplish with other long fodder, and the cost in grain fed has been no greater than before.

Raising the Crop.

In raising a crop of corn for packing the first requisite is to make the ground rich with manure, and it is good policy to use some alkaline fertilizer in the drill with the corn. Put your corn in in rows about three feet apart, and use from one to two bushels of corn to the acre, bearing in mind that with rich ground you can use more seed, and not jeopardize the raising of an ear on every stalk. Cultivate your corn thoroughly, and cut it for packing when it is in tassel, the stalk full of sugar and the ear in the milk. The quality of your ensilage will depend upon your following these directions as to cutting.

Constructing the Pit.

The next step will be the construction of a pit to preserve the fodder. Select, if possible near your barn, a dry locality, where the fall of the ground is such that you can enter your silo when the excavation is made, at one end, on a level with the ground outside. I would recommend a width of twenty feet, and a depth as nearly approaching twenty feet as the fall of your ground will admit.

Should you be so fortunate as to possess a situation for the silo where no water would find its

way in, build the walls of plank one and a half inches thick, and place them vertically against the sides, having your silo the same width all the way down. As it is positively necessary to keep out all leakage and surface water, you must either accomplish this through situation or else go to the expense of stone or brick and cement. For a covering you can use shingles or any material you please.

I have given very simple directions about the building of this silo, as each one has to take advantage of such location as his farm affords, probably no two being alike. To illustrate how simple a thing the construction of one is where the situation is favorable, I have one, built to hold three hundred and fifty tons, lined with rough boards, one and two inch spaces in many places between them, and nothing for a bottom but the roughest slabs.

Cutting and Packing the Fodder.

The time for cutting your corn fodder having arrived, haul it to the pit as fast as it is cut down. Do not leave it exposed to the action of the sun a moment longer than absolutely necessary.—Pass the fodder through a powerful cutting box gauged to cut it from say one-half to one inch long, and as it falls into the silo have it spread, and tramped firmly by a boy who should ride a horse or mule backwards and forwards all the time. At stated intervals send the men into the silo to tramp close to the sides and ends, for it is very necessary to have it firm there. When the pit is full, put in six inches or a foot of straw, cover with boards cut into short lengths, and weight with a thousand pounds of the most convenient material to the square yard of surface.

In feeding during winter, uncover a week's supply at a time, and make a cut with a sharp axe right across the pit, remove the ensilage in layers with a fork, and remember to cover with straw when you have taken out the day's supply.

A great deal has been said about the labor of weighting and uncovering the silo. In practice I find this to be inconsiderable; two hands this winter in one hour removed the stone from a sufficient amount of feed to last one hundred and eighty-six cattle six days.

With a view to increase the feeding capacity of ensilage I have drilled in some two or three quarts of cow peas per acre, and should they do well I hope to very sensibly increase the albuminoids in my feed, a substance in which corn fodder is rather deficient, and which has to be made up with grain.

Long fodder, as all will admit, is indispensable, and hay, situated as we are, very expensive. The claims ensilage has in this respect are that it will furnish the bulk necessary, and a larger portion of the ingredients for the cattle, at a very low cost, and with the addition of meal enable you to get butter, milk and meat not only at a reduced cost, but enable you to keep more stock than by the old methods.

I visited this spring several silos after their owners had had a year's experience with their contents. The result was in each instance entirely satisfactory, and packing fodder is now looked upon as one of the most important parts of the year's operations.

Chemical Changes Undergone.

The change that corn fodder undergoes in the silo improves its feeding properties somewhat. Many different accounts of what this change is and how it takes place have been given to the public. Most of them are obviously untrue and chemically unsound. The corn fodder when cut at the proper stage and properly weighted, undergoes a slight fermentation; indeed, this commences before the operations for its preservation are concluded. A portion of the sugar is converted into alcohol, probably during the earlier stages of the fermentation; portions of both starch and gum are converted into sugar. During the change of a portion of the sugar into alcohol, which is called vinous fermentation, the supply of air is exhausted, compression prevents the entry of a fresh supply, and the fermentation ceases for want of the necessary fuel for its continuance. The fodder remains in this state (unless water finds its way in,) until you take out the ensilage and loosen up all the particles; fermentation then after a lapse of some hours ensues.

Serious errors in practice sometimes result from erroneous opinions entertained and promulgated by scientific men, and the farmer requires protection against these; the more so as they are difficult to overthrow. It is only on a basis of often repeated and carefully recorded experiments made by competent persons that true theories can ever be successfully built up.

It is but recently, since 1860, that one of the most important facts connected with agricultural chemistry, viz: the question as to whether plants do or do not assimilate free nitrogen has been received as proven by the scientific world. After years of controversy and dispute the credit of this settlement is due to the world-renowned agricultural chemists, Lawes, Gilbert and Pugh, of Rothamstad, England, who have confirmed the experiments of Boussingault, carried on for twenty years with great care and patience. They upset all previous investigations, and establish the fact that plants do not assimilate free nitrogen.

What questions, let me ask, ought to interest farmers more than the kind and quality of food his animals consume, and the purpose each serves in the animal economy, and how he may be able to turn different varieties of food to the best account? To do this the farmer of to-day should have an intimate acquaintance with the results already attained in these directions, and endeavor to combine them with his practice. Let me urge you to look closely into these subjects that so nearly concern your business. Read what others are doing, and note the experiments made in every direction of your calling; but, above all, do your *own* thinking, and before trying any departure from your usual practice, however desirable it may seem, consider your resources carefully. Should you feel disposed to try ensilage, do so in a small way, unless you feel confident of being able to make it a success without previous experience; but rest assured, if you fail to properly preserve it, the fault will lie principally with yourself or your arrangements for storing it.

In conclusion, let me call your attention to the fact that for feeding cattle during winter and producing dairy products, few communities enjoy the facilities possessed by the farmers of Balti-

more county. Situated as you are where a network of rival railroad lines bring feeding stuffs to your very doors at the cheapest rates, with every facility for the purchase of stock cattle and a choice of the markets of the world for their disposal, it would be strange indeed if enjoying such advantages you should allow yourselves to be outstripped by others. In these times of oleomargarine and adulterations of all sorts practiced upon the food housekeepers consume, your attention should be turned to improving the quality of your produce. You will thus create an increased demand at better prices, for the thoughtful citizen of to-day likes to know the source from whence he obtains his supplies, and will pay you more for a pure article coming from one he can depend upon.

If there is anything, gentlemen, that will enable you to increase your production of meat, milk and butter, and maintain their quality, I, for one, firmly believe this to be—ENSILAGE.

Spring and Summer Diseases of Horses.

Delivered before the Farmers' Convention of Baltimore County, of 1881, by DR. R. P. LORD, V. S.

This subject is of such magnitude that were I to speak for days, instead of the limited time at my disposal, I could not do it full justice. I will therefore confine myself to three diseases that are most common to the horse, most disastrous in their results, and are not confined to any special class of the Equine race. These diseases are respectively "Colic," "Enteritis" (Inflammation of Bowels,) and "Influenza" or "Distemper."

As I wish this address to be of service to you, I will avoid technicalities and make it as clear and comprehensive as possible.

First. I find it necessary to explain to you the difference between those symptoms evinced in Colic and those of Enteritis, as one disease is frequently mistaken for the other, thereby leading to fatal results; as since those medicines often used with success in Colic would be liable to cause death if administered in Enteritis. In Enteritis the attack comes on gradually, restlessness, accompanied by fever, occurring some hours before the violent symptoms manifest themselves; while in Colic the pain comes on suddenly, and is violent from the first.

Second. In Enteritis the pain is continuous, as the intervals of rest, if any, are of short duration; but in Colic the paroxysms of pain are more violent, but the intervals of ease are marked, and the animal during these periods resumes his normal appearance.

Third. In Enteritis the abdomen is hard, and any pressure causes pain; but in Colic pressure or rubbing appears to afford the animal relief.

Fourth. In Enteritis the pulse is quick, hard and wiry. In Colic, during the spasms, the pulse is quick, full and bounding; but during the intervals of ease it resumes its normal best.

Fifth. In Enteritis the sweat occurs in patches, and is very often cold and clammy, and the extremities are cold; but in Colic, during the spasms, the horse sweats profusely, and the extremities are warm.

Sixth. In Colic the horse throws himself down violently, whether the ground is hard or soft, and strikes his belly with his legs. In Enteritis the horse is very careful where he lies down, picking a soft place, and is very careful not to hit his belly with his feet.

These are the distinctive symptoms whereby we can distinguish Colic from Inflammation of the Bowels, and *vice versa*.

Now we will proceed to *Colic*. This disease may be divided into two classes—the Spasmodic and Tympanitic, or Wind Colic. First, we will take the

Spasmodic Colic.

CAUSE.—This disease is usually caused by large draughts of spring or mineral water being given to the animal when in a heated condition. Improper feeding, and standing the horse in a draught of cold air when hot and exhausted.

SYMPTOMS.—The first symptom is restlessness; the animal paws the ground and looks uneasily at his flank; the belly is contracted, the muscles appearing like cords; soon he throws himself to the ground, rolls, kicks, and lies on his back, striking his belly with his hind legs; after a short time he gets up and begins nibbling the straw, until a second and a worse spasm seizes him, and so on successively, until unless speedily relieved death puts an end to his sufferings.

TREATMENT.—*Allopathic.*—Give this drench every hour until relieved: Sulphuric Ether, one ounce; Tincture of Opium, one ounce; Tincture of Belladonna, 20 drops; Tincture of Capsicum, two drachms, in a pint of water. Give enemas of Castile soap and warm water per rectum, and cover the whole surface of the abdomen with mustard and water made into a thin paste; also the loins immediately over the region of the kidneys.

Homœopathic.—Give Aconite and Tincture Nux Vomica, first decimal, of each in 10 drop doses every 15 minutes, increasing the interval after the sixth dose to half an hour; then to an hour, until the animal is relieved. If the disease is caused by feeding on green grass, give Tincture Colycynth in alternation with Tincture Aconite in the same dose and manner.

Flatulent Colic.

(*Over distention of the stomach and intestines.*)

This disease is sometimes termed Tympanitis, from the Latin *tympanum*, a drum, on account of the sound emitted on striking the distended part with the hand. This disease is to be easily distinguished from Spasmodic Colic by the distension of the abdomen, which in some cases is enormous. The symptoms in this disease are not as violent as in Spasmodic Colic, but are more continuous. The animal will lie in one position for some time, raising his head, looking at his side, and groaning occasionally, turning on his back and resting his legs against the side of the stall, and in other ways showing great uneasiness. This disease is usually produced by the fermentation of the feed in the horse's stomach. The gas thus eliminated, by producing undue distention of the stomach and intestines, causes an irregular resisting action of the circular muscular coat of the latter.

CAUSE.—The immediate cause of this disease

is injudicious feeding on grass or clover when wet with dew, or when the horse is unaccustomed to it; large feeds of corn or oats when in an exhausted condition; exposure to, and driving in, the heat of the sun after a hearty meal; large draughts of cold water, indigestion, &c.

TREATMENT.—Put animal in a large well ventilated stall or shed, thickly bedded down with straw; apply mustard embrocations to abdomen, and give the following drench every hour: (If there is much constipation give the dose in a pint of linseed oil) Sulphuric Ether, one ounce; Tincture Belladonna, 30 drops; Tincture Peppermint, 30 drops; Bi-carbonate of Ammonia, two ounces; Water, 1 pint. Give warm enemas as before directed in Spasmodic Colic.

Homœopathic.—In the first stages give Aconite in alternation with Ammonia Caustic every 15 minutes, gradually increasing the intervals. When there is much constipation give Nux Vomica, first decimal, in alternation with Ammonia Caustic in same manner. When the disease cannot be traced to over eating, give Tincture Cocculus in 10 drop doses every 15 minutes. Enemas and mustard the same.

Enteritis.

(*Inflammation of the muscular coat of the intestines.*)

SYMPTOMS.—Continuous pain. The belly is tucked up, the animal paws and shifts his hind legs, looking at his flank with an expression of extreme pain. The extremities are cold, and the body is bedewed with sweat in patches, which in the latter stages becomes cold. The animal lies down and gets up constantly, being very careful where he lies. The bowels are constipated and the urine suppressed. The breathing is short and quick; the pulse 60 to 100 a minute. Termination, if not speedily relieved, mortification and death.

CAUSES.—Drinking cold water when overheated; exposure to wet and cold; sudden chill; over exertion; neglected or badly treated colic; violent purgatives; hernia.

TREATMENT.—*Allopathic.*—Tincture of Opium, two ounces; Linseed Oil, one pint; giving in the interval 10 drops of Aconite every hour in a wineglassful of water.

Homœopathic.—Tincture Aconite, first decimal, 10 drops in a little water every 15 minutes for 6 doses, then every half hour. If the bowels are very constipated give Nux Vomica in alternation with Aconite every 15 minutes.

The next disease which I shall bring before your notice is

Distemper or Influenza.

I wish especially to direct your attention to this subject, as during the past autumn and present spring this disease has prevailed to an alarming extent in the city of Baltimore and neighboring districts, causing the loss of large numbers of valuable horses.

Influenza is an epidemic disease especially affecting the mucous membranes of the eyes, nose, throat and mouth, and is accompanied with fever. It usually occurs in the spring or autumn season, and is said by some authors to occur most often during the prevalence of easterly winds, but I cannot say that my own observation confirms this theory, as I have seen the most violent forms of the disease during the finest and apparently most healthy weather.

Young animals are the most subject to the disease, although I have seen a good many old horses affected, especially when confined in the same stable with others who already have it. That the disease is infectious there can be no doubt, and I also believe it to be contagious, as I have seen a horse 8 years old get an aggravated form of the disease from eating out of a manger lately used by an affected horse.

CAUSE.—The cause of this disease is supposed to be miasma in the air, but up to the present time we have no certain information on this point, and can only be guided by the peculiar manner in which the disease appears. Thus on one farm the greater number, if not all, of the animals will be affected, whereas the adjacent farm will escape. This leads to the conclusion that the infectious matter of whatever form is conveyed in clouds in the atmosphere.

SYMPTOMS.—The symptoms of this disease are in the first instance failure of appetite, dullness, followed by feverish symptoms; cough; quick, weak pulse; breathing slightly quickened and at times labored; grunting painfully; dry, hot mouth, red, injected appearance of the membranes of the nose and eyes; pendulous hanging of the lips; dull, staring; unhealthy coat; bright colored urine voided in small quantities; dung in small dry lumps. On the second or third day the throat is usually sore, the horse swallowing water with difficulty; a thin discharge flows from the nostrils and eyes, but soon assumes a thick yellow mattery appearance. The cough is loud, frequent and painful. In conjunction with this disease we frequently have dropsical swellings in different parts of the body, but more especially confined to the legs and head. It also frequently merges into Bronchitis, Pneumonia, Pleurisy, Enteritis, Typhoid Fever and Partial Paralysis of the hind quarters. It must not be understood that all these symptoms occur in one animal at one time. In fact the only ones which invariably manifest themselves are debility and fever. One or more of the other symptoms generally appear, but there is great variety as exhibited in different animals. Complications affecting the eyes also occur with this disease.

TREATMENT.—I will describe two systems of treatment applicable for this complaint. I do this as one class of medicines may be easily procured at the nearest drug store, whereas the other if not kept in stock would necessitate a journey to town, which involves loss of time and is not always convenient. Under all circumstances I would recommend that the stables be thoroughly fumigated with gas tar burnt in an open tin vessel with a few rags, as this tar, from the excess of Carbolic Acid it contains, not only thoroughly disenfects the stables, but has a beneficial influence on the diseased mucous membranes.

The *Allopathic* treatment is as follows:—Give the following drench morning and evening: Nitric Ether, one ounce; Tincture Aconite Root, 15 drops; Tincture Belladonna, 30 drops; Fowler's Liquor of Arsenic and Potash, 30 drops. Continue this treatment for three days, and if the symptoms are not alleviated and any complications appear, such as Bronchitis, Pneumonia, Pleurisy or Typhoid Fever, it is advisable to call

in the aid of a competent Veterinary Surgeon, as to the non-professional these diseases are difficult to diagnose and treat successfully.

The next system of treatment which I will bring to your notice is the *Homœopathic*, but as this more especially calls for a correct diagnosis, I will only speak of those remedies suitable for the symptoms that more generally occur and are the easiest discerned. In the beginning of the disease I would invariably recommend Tincture Aconite (first decimal) in 10 drop doses, administered in a tablespoonful of water every two hours. When the animal hangs his head, the eyelids swollen and partially closed, the throat sore, causing difficulty in swallowing, irritating cough, and the lachrymal fluid is dropping from the eyes, I would advise the use of Tincture Belladonna in 10 drop doses every three hours. When the discharges from the eyes and nostrils are mixed with blood, accompanied with a dry, hot mouth, and great depression, give Tincture Ammonia Carbonate, 10 drops, every four hours in a wineglassful of water. For constipation, with a stiff action of the hind legs or irregular bowels, give Nux Vomica, 10 drops, every four hours. For great depression, cold sweats, weak pulse, and general debility, Tincture Arsenicum, 10 drops, every three hours. Last, but not least, comes the greatest and proper stabling and attention. Put the animal in a large, well ventilated box stall, if possible in one with a southerly aspect, but free from draughts. Clothe according to the time of year, but always so as to keep the horse's body comfortably warm. Apply flannel bandages to the legs, removing, and hand rubbing the extremities morning and evening. Feed on thin oatmeal gruel, or bran mashes, being especially careful not to give large feeds for some time after the animal approaches convalescence. When convalescent a little grass, carrots, or scalded oats may be given, gradually bringing the horse back to his usual feed.

Barn-Yard Manure, Clover—the great Fertilizers.

Messrs. Editors American Farmer:

As fertilizers, barn-yard manure and clover are the main dependence of farmers. In our State we cannot make good crops without good manure, or a good crop of clover. Our farmers think it an impossibility to make manure enough on the farm to manure all the land they cultivate in corn, wheat, tobacco, potatoes, &c; besides we want manure for orchards, gardens, &c.

Next to barn-yard manure is clover. It is difficult to estimate the value of clover. It is said that Bishop Claggett was the first to introduce clover into this country as a fertilizer from Europe. He was ordained deacon in the Episcopal church by the Archbishop of Canterbury in 1767, at Lambeth Palace.

There are two varieties of clover, the mammoth or sapling, and the common red. The stalks of the mammoth or sapling grow 5 or 6 feet long, are larger, more tubular, sapling-like, and the roots are longer in proportion. The stalks of the small clover are three to four feet long, are smaller and harder, and the roots are shorter. An experienced dealer in seeds cannot tell the one variety of seed from the other. Whether the fertilizing power of clover is in the stalks, in the roots, or in the shade, is a mooted question. Clover as a fertilizer has great power. After a good crop of clover it is easy to make a good crop of corn or wheat, or tobacco, or potatoes, &c.

A clover crop may fail because the seed are not sown on frozen ground, and therefore the seed are not covered by the earth in the process of freezing and thawing; if the seed are not covered with the earth it may freeze in the germ, or it may perish from drought in July or August, or the crop may be dwarfed or crippled by pasturing too early or too much.

Some persons sow clover in January, some in February, some in March, some in April, on frozen ground; some sow in May on wheat or rye, and harrow with a light harrow, which is claimed to be beneficial to the wheat as well to cover the clover seed; some drill in with rye late in August or in the first half of September. "Where there is a will there is a way." Farmers who want clover can get it.

The crop of clover seed is from two to four bushels per acre. The price of clover seed is from five to twelve dollars per bushel. The mammoth or sapling clover seed may be made from the first crop without grazing, or it may be grazed until the first of June, not later, and may then yield a crop. It ripens later than the small clover, and therefore improves timothy hay if mixed with it. It is preferred by all stock, as hay or grass, to the small clover. The second crop of mammoth or sapling clover does not ulcerate the mouth, and therefore salivate horses, cattle and other stock, and therefore the fall pasture is very good. The second crop of small clover salivates horses.

The small clover may be grazed until the first of July, and then make seed; or a crop of clover hay may be made the middle of June, and then a crop of seed. The seed of common red clover is made from the second crop. Stock ought not to be allowed to graze the second crop of small clover, as it injures the crop of seed.

Clover seed ought to be cut before it is too ripe, or it will shatter in handling. The sooner clover is threshed after cutting the better.

A bushel of plaster, or common salt, or ashes, to the acre, improves the corn crop very decidedly. Liebig says, "in a soil where there is no sulphuric acid clover won't grow," therefore we use plaster. The long roots penetrate the soil to the sub-soil, conveying the fertilizing elements of the air to the sub soil, and bringing the potash and other minerals of the sub-soil to the surface. The atmosphere is loaded with fertilizing elements.

Clover, if sown as a fertilizer, ought not to be grazed until it gets its full growth. It is said that there are two and a-half tons of clover roots on a well-set acre of clover, which furnishes a very large amount of plant food. Some farmers think they can buy lime, bones and other fertilizers and dispense with barn-yard manure and clover. This is a mistake. The effect of all commercial fertilizers is seen more distinctly, and the profit is greater on land manured from the barn-yard or on clover fallow.

Washington Co., Md. THOS. MADDOX.

The Gunpowder Club.

The club held its May meeting on the 7th, at the residence of Edward H. Matthews, who farms in conjuction with his father, John D. Matthews. The tour of inspection showed everything in the usual nice order, fields, buildings and live stock being all in excellent condition, and evincing, as did the farming implements, the exercise of discriminating forethought and sound judgment.

Half Hour for Questions.

John D. M. has a lot with a good deal of rag-weed on, which he has rolled. Shall he rake off this material or let it be? L. Bacon thinks it would retard growth of clover; has raked it off his fields. D. Gorsuch and S. M. Price would rake it off, as the stalks would injure the hay. J. D. M. where he took the rag-weed off before, it left the ground very bare. Thinks it shades the ground and acts as a mulch. A. C. Scott in rolling in spring, attaches a brush to the roller, and this serves to grind up the stalks, but this should have been done earlier.

Col. Franklin asked value of prairie hay, which he could buy at $17 per ton delivered, whilst timothy hay, raised here, is worth $24. *a.* It is a coarse hay, but quality depends on time it is cut. E. Scott, stable men don't like it. A. C. S. they buy it, but use it for bedding.

J. D. M. Any danger in harrowing and rolling corn-ground by compacting it? S. M. P. Would apprehend none, while it is so dry; if wet it would injure it. E. S. Has noticed corn comes up much earlier where the ground is hard. Joseph Bosley. Has noticed same thing. There is little danger from rolling soil. E. S. Rolled his field this year after planting.

Crop Reports.

being in order for those who had not already presented them, a number were submitted. S. M. Price's average of yellow corn was 13⅘ bbls. and of white 12 bbls. to the acre. His wheat averaged 22 bushels. From 30 sheep he sold lambs and wool to amount of $156, besides what was eaten, and still had the 30 left. John Bond's averages were, wheat 17 bus.; corn 12¼ barrels. John Crowther Jr.'s corn 12 bbls.; wheat 20 bus. L. Bacon's wheat average, 19 bushels.

Col. Franklin read a chapter on the effect of descent of rain through the soil.

The club passed a resolution declaring it expedient and desirable to establish a hay market in Baltimore, to be under the control of farmers.

It was determined by the club to compete for the prize offered by the Agricultural Society of Baltimore County for the "Wagon Display of Farm Products," at its fall Fair.

Deer Creek Farmers' Club.

The regular monthly meeting of the Deer Creek Farmers' Club was held at the residence of Messrs. S. B. and Geo. E. Silver, on Saturday, May 7th. Messrs. Janney, Moores and Jas. Lee were appointed a committee to examine and report upon the condition of the stock and premises.

Mr. Janney, on behalf of the committee, reported that the Messrs. Silver's stall-fed cattle were in good condition, and that their stock cattle wintered on half feed were in excellent condition to go on grass. They have 180 sheep and the same number of lambs—all thriving. Some of the lambs are ready for market. Last year the Messrs. Silver turned their atttention to canning, in a small way, and with success. This year they are engaging more extensively in the business.—They have 40 acres in corn on their own farm, besides 50 acres in the neighborhood. They will can corn, tomatoes and peas. They have proved that canning can be successfully carried on in that neighborhood and deserve a great deal of credit for their energy and enterprise. In fact throughout the farm there was much to commend and little to find fault with.

Roots as Winter Food for Stock

Was the question considered, and we quote from the *Ægis:*

Mr. S. B. Silver said he did not believe much in the value of roots as feed for stock. If, however, he planted them for that purpose he would begin with the red top flat turnip and a few white top Dutch. Would plant with a drill, because more can be raised that way than broadcast. The ground should be well manured and plowed three or four times before sowing. Drill in the seed from the middle of July to the 1st of August. Harvest them before freezing weather sets in. He had fed them whole to sheep and thought they did the sheep some good. Beets are good for milk cows, but do not pay for the trouble required to raise them. He thought that if roots were a good feed they would be used more extensively. Roots should be kept in a good root house.

Wm. Webster had raised turnips and fed them to sheep. They are good for sick cows, but bran is cheaper and just as good. He is not an advocate of root raising, but might be if he kept a dairy. Sows turnips broadcast, but it would be better to sow them with a drill. He prepares the ground well and after sowing the seed, if it looks like rain does not rake them in. Otherwise rakes in the seed lightly. They are no doubt excellent for cattle. Had failed in raising ruta bagas.—From 600 to 800 bushels of turnips can be raised to the acre. Last year he fed some turnips to a sick cow and they acted like a charm. The advantage of roots is that they act similar to grass, and keep stock healthy. If sheep are fed on turnips the whole season they will come out without the loss of wool and in good condition.

John Moores thinks highly of roots, the cultivation of which is too much neglected. To grow ruta bagas, plow early in the season and work the ground a good many times, until seeding. Plant the seed about the 20th of June, and they will start before the grass. The only trouble afterwards is thinning. More white turnips than ruta bagas can be raised. After taking up potatoes, work the ground thoroughly, sow the turnip seed broadcast and run a horse rake over the ground. Turnips for table use should be buried. They are a good feed and a good medicine for cattle. He uses some in the fall and again in the

spring, when the weather begins to get warm. One thousand bushels of ruta bagas can be raised to an acre, and they are better than turnips for feeding. Mr. Moores always uses a little meal with turnips. Roots should be buried the last week in October.

Wm. F. Hays had grown sugar beets, mangel wurtzels and ruta bagas, and preferred the sugar beets. He believes burying them in the earth is better than keeping them in a root cellar.—Planted ruta bagas the 10th of June and sugar beets as soon as he had corn in. The entire labor and expense was not more than $8 per acre.

Bennett H. Barnes fed some white turnips last winter to sheep, and could not see that they improved thereby. Had fed potatoes to horses.—They act similar to bran, and produce smooth coats.

James Lee two years ago planted mangel wurtzels and sugar beets. The former all froze, but the sugar beets did much better. He does not think much of the fattening qualities of roots.—Their only paying value is in keeping stock in a healthy condition. For this purpose flax seed meal is much better.

Wm. Munnikhuysen regarded white turnips as totally worthless for feed. They may give cattle a better appetite, but he would rather have $1 worth of flax seed meal than 100 bushels of turnips. Had raised a few carrots and thought there was some little strength in them. It was his opinion that the corn raised on an acre of good ground is worth more than all the roots you can raise. All the benefit derived from roots can be supplied with flax seed or cotton seed meal.—There is no danger of cows aborting from being fed flax seed meal.

Johns H. Janney had raised sugar beets and ruta bagas, the last two years, and thought highly of the sugar beet as a feed, particularly for young stock. Had fed some calves and yearlings on them, giving the calves a little corn meal in addition, and they came out in fine condition in the spring. Each sugar beet seed produces about four plants which makes some difficulty in thinning, but after this is done there is no more difficulty. Last year from one acre he raised 900 bushels of sugar beets. He also raised a large crop of ruta bagas, but had no doubt the sugar beet is the best for cattle. It would pay to turn our attention to raising them. From 1,000 to 1,200 bushels can be raised to the acre. Except thinning it costs no more than raising an acre of corn. They should be sowed about the 11th or 12th of May, and may be harvested in time to seed the ground in wheat. In taking them out, a plow was run close to the row, which loosened them, so that a man following with a grubbing hoe can take them out easily and another one pick them up. Mr. Janney cut the beets with a root cutter. He saw no increase in milk when feeding them to cows, but never had calves do better than on beets.

James H. Ball attributes very little value to roots for feeding stock. Turnips fed to cows will produce a great quantity of milk but the quality will be poor. A cow will die if milked and fed on turnips alone. Another objection is that a large crop of turnips will impoverish the land so that nothing will grow on it for one or two years. In England the practice is to grow turnips and allow sheep to grub them up themselves. Turnips fed with meal in cold weather will make heavier beef than anything else except grass. They should be fed to milk cows only after milking; otherwise the milk and butter will have a disagreeable taste. Would give to fattening steers, in connection with meal a peck of turnips a day. Cattle should also have hay or fodder. He does not consider that they pay except to make a quantity of milk. He doubted whether turnips did sheep much good. Mr. Ball believed carrots the best flesh-producing roots, but are more difficult to grow. In regard to fattening animals on turnips and hay, analysis will show that the fat is produced from the hay, while the turnips are merely auxiliary.

Wm. W. Castner never had any faith in turnips as food for stock. They consist of 95 per cent. of water. The sugar beet is much more valuable. He never raised roots, except a few turnips, because he did not consider it paid.

Mr. Moores remarked that the analysis of turnips was of little account, as he had seen cattle fattened on them with some provender. He also spoke of the great attention given to growing roots in England, where they do not raise corn.

H. Spaulding likes to feed turnips, and agreed with Mr. Janney that they were a great thing for calves. He always gives meal too. Sows them from the middle to the last of July, on a potato patch. Had fed some to cows, but they got choked and had given it up.

Wm. F. Hays thought it a wrong idea to expect roots to supply the place of corn, hay, fodder, &c.

R. John Rogers had never thought white turnips much of a feed. Ruta bagas, however, are a good feed.

Alex. Hays last fall a year raised a small patch of ruta bagas and fed them to sheep. His sheep and lambs were better than this year when he had not fed ruta bagas. He cuts them with a root cutter and sprinkles a little meal over them when feeding. They are but little trouble to raise after being thinned out.

Thomas Lochary thought roots an excellent thing to use as a change of food for stock in winter.

R. Harris Archer thought the growing of roots involved too much labor and trouble in raising and feeding them. He thought it significant that the best practical farmers of Harford county do not raise roots to any extent.

Wm. D. Lee, the Secretary, had fed turnips to sheep with advantage, but would not depend much upon root crops as feed for stock.

Geo. E. Silver, the president, expressed his surprise that the members of the club knew so little about the cultivation of roots. He thought the root question was not sufficiently considered.—Some of the members had shown that roots fed with meal were of advantage to stock. The opposition to roots seemed to be because they would not fatten alone; but you don't feed hay, or corn, or oats, or fodder alone, but each in connection with something else. The ensilage question is now occupying the attention of a great many people. Many farmers are making silos and packing away green food for use with other things in winter. Roots ought to be fed in the same way. They will help the flow of milk in cows and sheep,

and keep stock healthy. Cattle fed on roots will not drink so much water—an advantage in very cold weather. A writer in the *Country Gentleman* says that from 20 to 40 tons can be raised to the acre. Thus one acre would feed a great many stock. As for the crop requiring too much work, if it pays we should be able to give it attention. He believed the silo system would elevate the business of farming in our State.

Our French Letter.

Causes of Contagion.

Messrs. Editors American Farmer:

M. Pasteur is closely occupied with his experiments on the causes of contagion. He has already shown that in the case of hen cholera the malady was due to the presence of animalcules, called microbes, a kind of life, recalling fungus, and belonging to the same class of infusoria as those under the designation of bacteria and vibrons. Science does not exactly know the complete history of these organisms, but which play an important role in fermentation, contagion and decomposition. They appear as spores, in the form of minute particles, or as delicate threads, reproducing themselves with an extraordinary fecundity, and subsisting in their medium till they have exhausted all the elements necessary for their existence. The oxygen of the air is the principal moderating agent on the action of these animalcules, which may, as a general term, be viewed as virus. How then can oxygen be made to diminish the terrible effects of virus in the case of contagion—cattle plagues for example. The germs have the power of propagating themselves by scission, independent of the presence of the parent spore or seed, similar to the case of beer leaven, where the cellules of fermentation multiply themselves indefinitely without the presence of the parent seed; not unlike those plants raised from slips or cuttings. In the case of the animalcule bacteria, ascertained to be the virus in the cattle pest known as *charbon*, its thread-like form is hardly multiplied during twenty-four or forty eight hours; then they become transformed into egg-like particles, or seed germs. M. Pasteur demonstrates their wonderful vitality; he has preserved some of these bacteria since March, 1877, in a glass tube, and when he places some of the germs in conditions favorable to be hatched or developed they germinate with the same facility and rapidity, the same virulence, as the original seed which produced them four years ago. He prepared artificially a liquid and exposed it to pure air during a month, and at a temperature between 108° and 109°. Up to the last day the liquid was capable of reproducing germs—that is to say, after the month it completely lost the power of production. Still more singular, if bacteria be placed in this liquid it loses after a residence therein of ten days all its virulence, at least in the sense that it is incapable of communicating the mortal effects of the plague to sheep and rabbits—animals the most liable to contract the disease. Since the virus can be thus rendered inoffensive nothing (according to M. Pasteur) is more simple than to inoculate sheep, cows and horses, and so prevent them from falling victims to the terrible disease. He has done so with marked success in the case of sheep, and during the summer intends practicing inoculation on an extensive scale on flocks in the Beauce. As in the virus of hen cholera, so in that of the *charbon* malady of cattle and sheep, it can be obtained in several degrees of virulence. Now since the air—that is to say, its oxygen, can lessen the effects of virus, the latter can renew its virulence when it encounters the conditions favorable for development, hence why plagues appear so suddenly as to be called spontaneous, the fact being that the germs of the disease were only sleeping. These remarks are applicable to pestilences in general. Some countries have their special virulent plagues; moderated by oxygen their virus only assumes the active form, when the conditions of climate, famine and misery reappear. There are maladies again which break out spontaneously in all countries, such for example as camp typhus The microbes or germs—the author of typhus—are everywhere; man has them in his intestinal canal, which do not injure him, but are not the less ready to become dangerous by the over-population of a place, or their development on the surface of wounds, or in weakened constitutions, enabling them to regain their virulence. What then is a microscopic animal, inoffensive for man? An organism which cannot develop itself in his body. But nothing proves that that organism cannot penetrate and become developed in another animal, no matter how small, increasing in virulence proportionate to the size of the animal, and augmenting in intensity till it can affect man and live stock.

The New Tariff.

The senate has definitely voted the general tariff, and thus the provisional state in which agricultural interests have been existing for years has come to an end. Henceforth the government is free either to make, within six months, a treaty of commerce with any nation, or apply the general tariff. For the future the following are the rates that imported stock will have to pay per head: oxen, fr. 15; cows and bulls, 8; heifers, &c., 5; calves, 1½; sheep, 2; lambs, goats, &c., ½; pigs, 3; for fresh slaughtered meat the tax is 3 fr. per two cwts.; salt meat, 4½, and preserved or canned meat 8 fr. per two cwts. Will these duties exercise a favorable influence on the future of French agriculture? The protectionists and free-traders seem both to think they will not; the former, because the taxes are not sufficiently heavy, and the latter, because deemed excessive. In any case many departments will be inconvenienced, which do a large business in the importation of lean stock for fattening. Respecting fluctuations in the price of stock, these being largely dependent on meteorological and economical causes over which the legislature can exercise no control; the subject may be passed over. Now they are these oscillations from which the breeders of cattle suffer. In general the price of meat will tend upwards, and the foreigner will, as heretofore, enter into competition when the price will be sufficiently tempting. Many impartial authorities would prefer the abolition of

all duties, and instead the striking of a tax of 2 to 3 per cent. uniformly on all importations.

The Sugar Beet Crop.

The condition of the beet sowings is good, and where the seed has been judiciously selected the most favorable results may be anticipated. Varieties of beet rich in sugar are what the manufacturers seek, while farmers lean to quantity, at the expense of quality. While interests will be thus in antagonism progress must march under difficulties. The sugar harvest last year has been bad in France, and is chiefly due to inferior seed. In reference to the general question of sugar industry the prospect is not so clear, this is to be attributed to legislative causes, and the difficulty reconciling England to accept in free-trade sugar receiving a bounty from a government before being exported.

The Phylloxera.

An important discovery has been made by M. Lichtenstein respecting the phylloxera. He has at last obtained the winter eggs—the only real ones—on vines (the American Clinton) two years old. But he has discovered them not on the stem of the growing vine, but invariably on the prunings of the vine, which are tied up in bundles ordinarily for fire-wood. Hitherto the eggs were sought for on the stems exclusively. The galls are formed on the vine leaves by the phylloxera, on the surface opposite to that on which the insect has pricked; thus in the leaf of the elm, the bug peculiar to that tree makes its puncture on the under surface of the leaf and the gall becomes developed only on that side; the phylloxera, on the contrary, pricks the upper surface of the vine leaf, and the gall is developed on the opposite side, that is underneath.

Paris, April 20, 1881. F. C.

Phosphates in Fertilizers.

Editors American Farmer:

I regret that I am misunderstood, both by you and your correspondent "B," regarding the application of soluble phosphoric acid. I never intimated such a thing as it not being valuable as a fertilizer, on the contrary know it to be, but said it was not plant food, simply because it cannot exist in the soil in such a form, for the moment it comes in contact with any alkaline earth, lime, &c., instantly it passes to its former condition and becomes a precipitated bone phosphate. Such being the case I found fault with manufacturers and ignorant men calling themselves *chemists* in estimating the value of a fertilizer by its soluble phosphoric acid. Using such a standard the farmer might be misled in buying a fertilizer at a much higher price than a better article could be bought for containing a much larger quantity of precipitated bone or bone flour, which is after all the final result of the mono-phosphate of lime when it reaches the soil.

As it is an undoubted fact that *phosphate of lime* (not the salt known as soluble phosphoric acid) is plant food. Surely the aim should be to get as much of it as possible in a fertilizer and as cheap, for surely the farmer has no money to throw away on worthless stuff, as is often found in them. A few days ago being detained some time at a steamboat landing, I noticed a large number of bags of fertilizers there, branded as follows:

Ammonia	1 to 1½
Phosphoric acid	5 to 5½
Potash	2 to 2½

The whole making 8 per cent. Presuming this is all the available plant food in it, may I ask what the other 92 per cent. consists? To get the small *touch* of ammonia, 1 to 2 per cent., (it used to be 8 to 10, then 5 to 6, then 2 to 3, and now 1 to 2). I suppose a large portion of *worthless organic matter*, such as old leather, cracklins, tankage, or any other compound contsing a little nitrogen, was stuffed in to enable the maker to certify to the nitrogen present, when the whole universe abounds with it, and which the writer firmly believes has and will continue to supply it for all time to come, and in all its purity, without looking for it in every offensive form, and compelling the farmer to pay for a worthless article.

What he wants is *plant food*, and if it is phosphates put it on the land in sufficient quantities to be of some service, and not gull him with the idea that all he wants is a little soluble phosphoric acid and small puff of ammonia. In the above article spoken of, suppose the phosphate is the needed article, what a fearful price he must be paying for it, as I am sure the cost of the fertilizer was between thirty and forty dollars per ton.*

In conclusion, as both you and your correspondent misrepresent me regarding manure, I will ask you whether you can place your finger on a word or sentence of the writer that he ever had abandoned or doubted the use of manure? Instead of being a despised article, it is what I claim as an almost necessity to restore worn out lands, which I know, and every practical farmer knows, that commercial fertilizers will never do alone; they may bring clover which in turn may be turned under or fed on the place to make manure, and they may make a cotton crop, but I think no one will ever claim that they will restore worn out lands. That such lands can be restored there is no doubt, but the subject is too long a one for this paper. A. P. S.

Kent Co., Md.

*Then the purchaser must have been ill informed of market values, for any reputable manufacturer here would be willing to sell such an article at much less money, if indeed he would sell it at all.—*Eds.*

Things Doing and to be Done.

Messrs. Editors American Farmer:

One thing is certain—time flies. In looking forward it seems to hang fire, but to look back it seems to have been in a hurry. The winter beat my times—it was one you may have read of. Autumn was cut off pretty short and winter assumed its sway with a will and we had a full share of it. So it lingered in the lap of May,

Spring was soon pushed into summer. Take it all in all we may never see the like again. Certainly the human family was put to its trumps and the oldest man was non-plussed. Many living were stinted for food; hard times were the rule, and comfort the exception.

Now, early in May—not far from and well on to the end of spring, it is to be hoped that there will be a continuation of growing weather. May Heaven vouchsafe to us an abundant harvest. Let us put abundant confidence in omnipotence and exercise ourselves in prayer and praise. Providence is munificent; "Ask and you shall obtain—Seek and you shall find."

The immediate past has been an epoch in the annals of the world; the lesson we have learned should not be lost. In times of peace we should prepare against troubles; we should do our best and trust to providence for success. I am not a prophet or the son of a prophet, yet I judge of the future by the past. I have heard history oftimes repeat itself and my experience goes towards its verification. By the time this may be in print—harvest will be drawing nigh; we will be able to calculate what the probable result of our year's work and outlays will be. I would not wish to cast a damper on our hopes and prospects, yet I cannot forget "there is many a slip between the cup and the lip," and blessed be he whose hopes are not too fervid and his disappointment not imminent. Now the fields are green, the weather mild, rains have been abundant and the prospects fair. The corn, potatoes and vegetables will be advancing to supply the accustomed demands. I might say to our fellow farmers be of good cheer—abound in faith, hope and prayer. We have all had our troubles, our disappointments and our fears; but trust we have not lost our senses, our manhood and our philanthropy. Idleness is without profit; laziness falls short of success, and "*don't care* lost his corn field." A hundred years of despondency never paid a cent of debt, so push along and keep moving. If you are single get out of the slough of despondency.

> Auld nature swears the bonny dear,
> Her noblest work she classes, oh!
> Her 'prentice hand she tried on man,
> And then she made the lasses, oh!

Messrs. Editors, I am a philanthropist. I wish well to everybody. The world has enough for every one that is in it. If it is not to be had at one place, there are still other places.

> There is a Jack for every Jill;
> If one won't, another will.
> If she will she will, you may depend on it,
> And if she won't she won't, so there is the end on it.

The corn will have been planted, harrowed and re-planted ere this will be before the readers of the June number. All our energies will be needed. Much attention and work will have to be applied to make it a full success. Everything needed should be on hand and nothing lacking. There will be perhaps re-planting as well as thinning to be done. Harrowing, plowing and plant food to be applied. Supply all the wants; use all the means, so if the worst comes to the worst you can say I did my best! There are many kinds of corn—ordinary, good and extra. Some kinds answer better in some localities than in others. As the winter did not admit of being utilized to the best advantage, summer by being taken advantage of may prove profitable; as there has been seed time, doubtless there will be harvest. The successful man will be the one that "used the shovel and the hoe." Be ready with needful implements by the time harvest is ready. A long pull, a strong pull, and a pull altogether, will accomplish the good work in good time.

Jefferson Co., W. Va. PHILO.

Complimentary to American Agricultural Newspapers and Agriculturalists.

A scientific gentleman, (American) residing in England, to whom I occasionally send agricultural journals, in a note just received speaks of them in flattering terms; "It is astonishing what an amount of entertaining and instructive matter the United States publications convey and at a small cost. Well, you have readers who are instructed early in life, and get a thirst for knowledge, and don't outgrow the habit of acquiring it.

"Ask a man here, especially an agriculturist, if he reads any thing or much? He will reply 'not much,' which means literally nothing but his penny newspaper. And what is more, you can't stuff knowledge into them!"

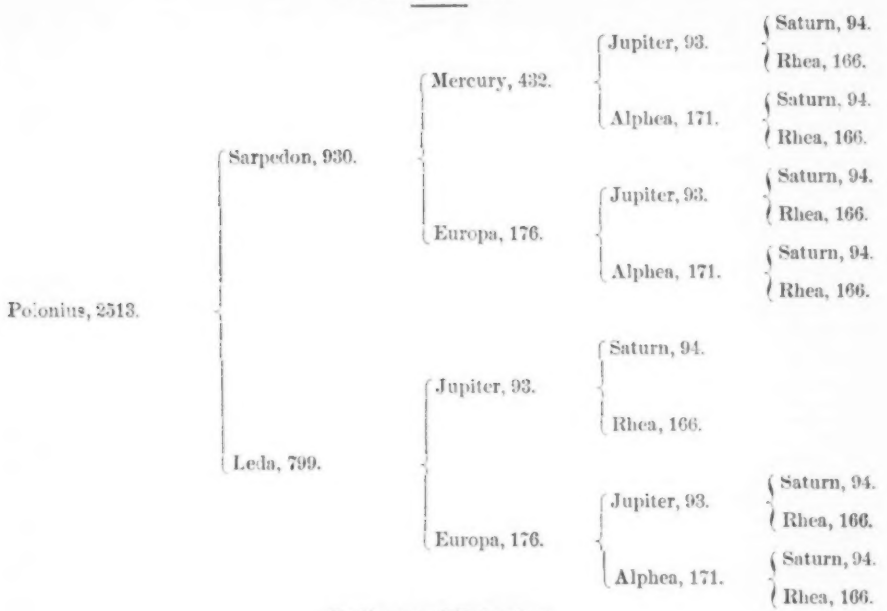
Washington, D. C. G. F. NEEDHAM.

Cattle and Poultry Show at Vienna.

I went last Sunday to the Cattle Show here, the first that has ever been held in Austria, and modeled after our shows. The building was put up for the occasion and was admirably adapted for the purpose, being large and well lighted. The show was very fine, some of the cattle, particularly those from Hungary, were very beautiful. They are about the color of a lemon, have magnificent shoulders, great girth and clean small limbs, evidently very fine beef cattle. The milch cows were poor, being mostly crosses of the native stock with north Dutch or short horns, (very little short horn). The hogs were excellent, though I did see two immense woolly beasts mis-labeled "Berkshire." The chickens would have delighted the heart of all bird fanciers. Every variety was there from the brahma to the bantam. I saw there, too, for the first time, the French apparatus for fattening fowls. It consisted of a lot of small boxes in a frame which revolved. In each box was a hen with her feet chained down to prevent all motion, and in front of the machine was a gigantic syringe filled with prepared food. The attendant brought every hen around in position, put the nozzle of the syringe down her throat, gave a push with the handle and the meal was finished. The hens in this merry-go-round seemed to be very happy.

April 15, '81. W. T. COUNCILMAN, M. D.

Jersey Cattle.



Pedigree of Polonius.

Messrs. Editors American Farmer:

I said in my last that a thing is presumed to be worth what it will bring in the open market. I am inclined to believe since the Wing sale, that this is a very violent presumption when such a bull as Polonius, 6 years old, lacking generative power to a very considerable extent, with nothing to recommend him but the fact that his great-granddam was a remarkable butter cow, and some of his remote collateral relatives were more than ordinary, with no produce of his own which has shown either remarkable beauty of form or extraordinary performance, brought the heretofore unheard of price of *four thousand five hundred dollars*. And at the Kellogg combination sale, New York, May 17, Leda, the dam of Polonius, and now twelve years old, sold for $3,000, the highest known auction price for a Jersey cow. Indeed the spring sales have been unprecedented. Mr. Holly, on six, three Alpheas, one daughter of Favorite of the Elms and two Rex-Pansys averaged $1,085.39, and no animal over two years old. At the Wing sale the whole lot, cows, bulls and calves, 46 animals, averaged $515.33; average on cows and heifers $451.20; on bulls and bull calves $942.50. Twelve cows and heifers, either of the Jupiter-Alphea blood to a greater or less extent, (or *supposed* to be in calf to Polonius,) averaged $695.23, three Alphea bulls, (Polonius and two bull calves,) averaged $1,887, while three bulls without this wonderful blood only averaged $65, which certainly shows that what I formerly said was true, that while the Alphea blood may not be the best it certainly is the most fashionable. It goes a great way to prove my assertion that American bred Jerseys are more sought after than imported. It is true that Fancy Fan, an imported cow, brought $2,000, this was because of her excellence as a show animal, she having scored 90 points on the Island, and rivalled the wonderful champion cow Coomassie.

What are the causes of this great popularity? And what is meant by the so-called Alphea blood?

We will take these questions in their reverse order. In 1861 Col. R. M. Hoe imported the bull Saturn, 94, and cow Rhea, 166. From these he bred Jupiter, 93, and Alphea, 171; these he again crossed, (brother on sister,) and produced Mercury, 432, and Europa, 176; these last, (brother on sister,) he coupled and produced Sarpedon, 930. He also crossed Jupiter, 93, on Europa, 176, (father on daughter,) and produced the cow Leda. This in-and-in-breeding was kept up by the cross of Sarpedon on his half sister and aunt, Leda, the produce being the bull Polonius, whose tabulated pedigree heads this article.

In a letter signed L. J. in your April number, breeders are advised to select "a bull of good sound pedigree, without any in-breeding." I commend the above pedigree and the price the bull brought to the thoughtful consideration of your correspondent L. J.

Animals which trace back to this single pair of imported ancestors, (Saturn and Rhea,) are said to be of pure Alphea blood. And the great Hark Comstock, a graceful writer on breeding, claims that this blood, more than any other Jersey blood now in the county, possess "that

rare gift of nature—the quality to improve their kind." It is a maxim in breeding that "like begets like or the likeness of some ancestor." And it is certainly sound policy where great performance occurs in the immediate ancestors of an animal to use it in future crosses, as the chances for good results are greater. And this in-and-in-breeding, where the blood is better than can be found in an out-cross, is recommended by all authorities on breeding, if, as Stonehenge says, it is "not carried further by art than nature teaches by her example."

This incestuous breeding is condemned by many intelligent breeders, and with good cause when carried thus beyond nature's teaching, and, as frequently happens, the advocates of both systems are right to some extent. It seems that the middle course, breed in and in for performance as long as nature does not rebel and then breed out for constitution, is the plan from which may be expected the best results. But this plan requires so much foresight and intelligence in the breeder to know just when he has gone far enough, that it may be looked upon as a "rare gift of nature," which few possess. Hark Comstock, the great advocate of this strain of Jersey blood, gives in a letter to the *Country Gentleman*, of May 12th, in answer to the inquiry of a breeder, the names of ten cows which are credited with a yield of 14 pounds or more of butter per week, viz: Eurotas, Alphea, Euphrates, Rioter 2d's Venus, Oak Leaf, Maple Leaf, Echo, Rachel Ray, Lass Edith, and Myra 2d. A glance at the breeding of these show but one of the pure Alphea blood, (Alphea herself,) and Hark Comstock is forced to admit that he knows of no cow of exclusively Alphea blood that has reached this limit, except Leda, who has no record, but is believed to have exceeded 14 pounds; but we are not treating of estimated yields. Many men have believed themselves the possessors of a 2.40 horse until they applied the test of a good watch, and were then glad to get a performance of three minutes or more. Of the other cows named three only possess the blood of Alphea while *all* trace to Jupiter. Mr. Seth, of our county, has taken up the gauntlet, and in a letter in reply to Hark Comstock, published in *Country Gentleman*, of May 26th, compares the results of the combination of the Albert, Splendid, McClellan, Pansy blood, of which I gave a full account in my last with that of the Jupiter-Alphea.

It is not my purpose to enter the controversy, but I commend the careful comparison of these lists of the performers of these two strains to the consideration of the breeders among your readers. As Hark Comstock does not give the performance in figures of the representatives of his side of the question, I will simply say that with the exception of Alphea's *estimated* yield of 24½ lbs., and Eurotas' 23 lbs., none of the others have exceeded 18 lbs., while on the other side we find Value 2d, 22 lbs, as four years old; Lady Mel 2d, 21 lbs., May Blossom, 18 lbs. 9 ozs., as two years old; Bradley cow, 18 lbs, besides such cows as Filbert, Pansy: 1019, Pansy Sutliff, &c.

The only "Alphea blood" that I know of in Maryland in addition to Mr. Von Kapff's bull, Mr. Hand's bull and Mr. Seth's heifer Alphea Prospective, as already mentioned in your columns, is a cow Miss Edith, and her descendants in the herd of Mr. S. M. Shoemaker. Some years ago Mr. McHenry bought of Mr. Faile the bull Matchem, by Mercury, the son of Alphea, but he only begot two calves to my knowledge while in Baltimore county—Miss Edith mentioned above and Dessie Labyrinth recently sold by Mr. Seth to Mr. Holly. We believe that some of our Baltimore county breeders attended the Wing sale, but their poles did not seem to be long enough to reach the cherries.

The characteristics of this Jupiter-Alphea strain of Jersey blood seems to be the reverse of what Jersey breeders have been striving for heretofore, with the exception of the production of butter. They lack as a rule the small incurving waxy horns and long whip-like tails. On the contrary their horns are usually coarse and black and stand up straight, the tails are decidedly "bobbed," and altogether they lack that beauty of contour which has done so much toward making them popular as lawn ornaments, and which has made many sales for the breeders which they would otherwise have missed. That they have been in-bred until both sexes are showing signs of sterility, cannot, I think be denied. Why then should they be so popular. We have other strains as good, if not better, to select our males from, notably the Rex or Pansy, McClellan, Splendid strain, which are the peers of the Alphea in the dairy, and greatly their superiors in constitution and beauty of form. Has any of your readers ever known a pure Alphea to score a place in the show ring? Altogether I think the recent sales, at these enormous prices, are calculated to harm rather than benefit the Jersey interest at large—like fashion in colors—the present craze will, I fear, cause breeders to lose sight of real worth for pedigree. As Hark Comstock says, "purity of breed is one thing, valuable pedigree may be quite another."

At these spring sales while prices were greatly above any before known in auction sales of Jerseys, yet many really meritorious animals sold extremely low. Their breeding was as pure (as all registered animals must be) but they lacked that other quality—"the valuable pedigree"—the ability to show in their line of immediate ancestors a large proportion of *great performers*. Nothing in the Jersey line will sell now for remunerative prices unless of itself an extraordinary performer, or will trace to such. And it behooves our breeders in selecting males for their herds to look well to this. It would be well if the butchers had one-half the male Jerseys in this county to-day.

A bull should never be used for the sake of economy or convenience. You are by so doing not only injuring your own herd but the breeders generally by producing a lot of inferior animals, which will not bring (and are not worth) as much as good natives. X.

Cotswold Sheep and Short Horn Cattle.

Messrs. Editors American Farmer:

The wheat crop on the Eastern Shore, or rather in Queen Anne's Co.—"the hub," is particularly promising, and those of us along the banks of the salt rivers are blessed with an abundant peach crop, whilst orchards in the interior are made

fruitless by the extreme cold weather of the past winter.

Our county papers are claiming much for us as a stock producing county. Carloads of Herefords have been shipped away off to Nebraska at from $30 to $50 per head, whilst the demand in Maryland is extremely brisk for Short Horns, and they are taken as fast as they can be produced from my herd of forty and over registered cows. Last week I sold to Judge Fred'k Stump, of Cecil Co., Md., heifer calf "Belle of Poplar Grove," 6 weeks old, for $125, and "Kentucky Prince," 4 months old, for $100. These are not claimed to be big prices, but fair ones, and fully illustrate the fact that Short Horns are the preferred beef cattle in Maryland. Cotswold sheep are in great demand this season, and nearly all my lambs are already taken at paying prices. Having sold off so close the past season, I have been compelled to import some yearlings from Canada to meet the demand for yearlings, and have a superior lot (registered ones) that clipped an average of 15¾ lbs., clear of tags. Three of my own breeding of ewe yearlings carried over from last summer, clipped 16½, 17 and 17¾ lbs. of wool, clear of tags; and I think this season's lambs, with good care, a year hence may even give larger weights than these. Good winter keep not only forces the carcass of the sheep into greater size, but largely increases the weight of the fleece, and it is false economy in any farmer to starve off the fat from his animals in winter to be able to sell a little more hay or a little more corn.

E. B. Emory.

Good Fleeces.

Mr. E. C. Legg, of Kent Island, Md., writes us: Having passed through the rigors of the hardest winter recorded in modern years, sheep in this country are necessarily thin, as many flockmasters depended in a great measure to their taking care of themselves, in which case there has been a small crop of lambs, light fleeces and many deaths. And although my flock is not up to their usual standard, yet considering the severity of the winter and other drawbacks, I am willing to compare fleeces with anybody else. I sheared imported ram, "Royal Sherborne," in the month of April, and clipped just 20 lbs. of wool from him, and had he been kept to the usual time of shearing, when the yolk in his fleece would have been more abundant, I am sure he would have sheared 24 to 25 lbs. fleece. He ran with the rest of the flock, is in only ordinary condition, and all things considered, he is the best shearer under the same circumstances I ever saw. Ewes that heretofore sheared 16 to 18, this year gave only 10 to 12, which shows had he been kept in high order his fleece had far exceeded 20 lbs. Some of my ewes gave this season the following weight of fleece each: 11, 12, 12½, 14½ and 17 lbs., all 2 and 3 year old sheep.

The sale of Jersey Cattle advertised by Mess. Herkness & Co. in this issue, deserves notice from all breeders of that popular race, and we call their attention to it.

Breeds of Poultry for Farmers.

While pure bred poultry, or quite a number of the breeds thereof, constitute what is generally known as possessing the qualities desired for a profitable farmer's fowl, none will fill the required desideratum as completely as will some breeds that may be crossed for this purpose. One of the principal reasons why this is so with farmers is, they will *not* introduce new blood, or follow out a line of special breeding, as does the regular poultry fancier. Crosses are more hardy, the very cross gives new vigor and blood, and if due discretion is observed in breeding cross-bred fowls, the object aimed at, whether eggs or meat alone, or a combination of both, can be satisfactorily secured. In England, the Houdan cock is bred to the dark Brahma hens, and produces what is there known as the "farmer's favorite," or "Brahma-Houdan," and the eggs are in as good demand as any of the pure breeds. The best cross we have ever made for a general utility fowl—eggs and meat; chicks fit to kill and in good condition any time after four weeks old—is White Leghorn crossed on the Houdans. The Houdoun crossed on Dominiques makes a very valuable fowl, exceeding all others we have ever had as winter layers. The Houdan crossed on the Black Red Games, produce the finest table fowl known, in our estimation. No doubt the Houdan and Plymouth Rock would produce a good fowl, though we have never tried that cross. Brown Leghorns crossed on Partridge Cochins, improve the latter and make a handsome (generally) clean legged bird. A special feature with the Houdan is, no matter what breed it is crossed on, the size of the eggs are increased and table qualities greatly improved. We know of no breed so valuable to use, whether to cross on common fowls or pure bred, as the Houdan.

G. O. Brown.

Breeding Poultry Successfully.

Those who engage in poultry breeding are in many instances very apt to commence with too many kinds. They get, so to speak, the "fever," and *crowd* their premises with stock. Poultry to be kept in a thriving condition must, as extensive experience by the many has proven, be kept in limited numbers or small flocks.

It has always been a noticeable fact that where a flock of twelve or fifteen hens are kept, and were permitted an unlimited range, how well they thrived, and the fact has so stimulated the possessors of such profitable flocks with an idea there was "millions in it," that they, of course naturally reasoned, with a multiplication exactness, that twenty times as many would also bring in a revenue twenty times as great.

Such is *not* the case, for obvious reasons. First, the food must not be overlooked, that the foraging of a large flock will quite soon and effectually exterminate the insect and weed-seed pickings that would afford the small flock choice morsels of egg-producing food for a considerable time. Then the "herding" together of a large number of fowls engenders disease at once of various kinds, as well as causing or producing the parasites so well known that prey upon our domestic fowls.

The difficulty of keeping and caring for a large flock is not estimated properly, as it is much greater in proportion, and demands very much more *time* and care. Therefore, those who launch out in business of poultry breeding will be wise if they will be guided by the practical experience of those who have given their attention, &c., to this point in question. Where one is so situated that entire attention will be given to the business—making it no secondary consideration—then poultry in large numbers, if allowed to have roosting apartments with accommodations for not more than sixty or seventy, can be successfully and *profitably* carried on.

Unless plenty of room and range can be had, it will perhaps be best to confine your enthusiasm to one breed. You should then earnestly study the characteristic traits of the breed you have concluded to keep, and unless you can each year see decided improvement in your breeding stock, so much so that "outsiders" will also note the fact, then rest assured that poultry breeding is *not* your forte. Poultry breeding or raising is like any other branch of business—if one adopts it as a profession, or commences the business with a prospective fortune in view, simply because others have been fortunate, success will be sure—not to attend his efforts.

Men who to-day are celebrated in this connection, whose "strain" of birds have a world-wide reputation, did not grasp and gain all at a single clutch of the outstretched hand. Persistent effort, patience, skill, coupled with a love for their business aside from the dollars and cents it might bring them, crowned them with success.

Commence with one breed, be faithful in the caring and providing for it. Many are enthusiastic during the early or spring months, but when hot weather asserts its powers their enthusiasm is gone, and at a time when their flocks need especial care and attention. The instant the poultry is slighted commences a reduction in the profits—a fact those interested should never lose sight of.

Bee Notes for June.

Bees should be strong now, if built up, and swarming will commence in earnest. Remove all drone combs from brood nests that a horde of worthless consumers may not be reared, and your honey crop shortened in consequence. As soon as the white clover blooms freely, contract the brood chamber by the division boards and force the workers into the surplus honey boxes if you wish to get a large crop of honey—put the combs taken out in a tight box, and keep a good watch over them that the worms do not attack them. If they contain brood—give them to a weak colony or a new swarm. See that the surplus honey boxes are given as fast as required, and the bees don't suffer for want of room, or they may get the swarming fever. Exchange full frames of honey from the brood nest for empty ones placed in the centre of cluster, filled with foundation. As soon as the surplus honey boxes are filled, do not wait to have the bees seal it up, but raise them and put empty ones beneath them. During hot days shade the hives where they set in the sun by nailing two pieces of board together at right angles and place on top of hives—a current of air will pass through and keep the hive cool—where the caps are ventilated by having holes bored through and covered with wire cloth this is unnecessary except in extreme hot weather. Those who practice natural swarming, should see to it that the old hive does not become queenless—of which there is great danger, as the young queen may be lost on her bridal tour, or fail to enter the right hive. Such a queenless hive would soon become weak and fall a prey to the worms, or robber bees, if not watched. The safest way is to rear, or buy queens, and introduce them to the swarming hive *at once*, and remove all queen cells, when both hives would alike prosper.

In working among bees, don't forget to avoid quick motions, or jarring the hives, as it causes them to be angry. Never strike at a bee; if they come buzzing about threateningly, cover your face with your hands and walk quietly away into the shade of some shrub or building, and the angry bees will soon go to their hive.

Ants often get into the hives and both annoy the bees and bee keeper. Start them out with a smoker, and brush a little spirits of turpentine, or coal oil in the parts they frequent, and they will soon "make tracks." A little salt placed on the ledges, or where the cap joins the hive, will keep them at a distance.

Keep spiders from spinning their webs about the hives, as they destroy many bees. Don't neglect the empty combs and let the moth eat them up. If any appearance of the "wax eater," treat him to a dish of burning brimstone for a lunch, and they can be kept from harm till they can be covered by the bees, and when once under their protecting care, they are secure as long as the swarm is strong. L.

Sunny Side Apiary, Baltimore.

Book Farming.

As a slight contribution to the literature of agricultural progress, permit me to mention an incident of travel.

Circumstances brought me to a foundry in this county, the blacksmith shop of which is conducted by one of those intelligent and skillful mechanics who are an honor to their calling and the state, and who constitute one of those strong foundations upon which modern agriculture now depends for its prosperity.

In conversation with this gentleman he said: "Talk about book farming! why this prejudice against agricultural literature is absurd; go and look at my young orchard and see if you ever saw a finer prospect for fruit, and I owe it all to what I have read in the *American Farmer*. I didn't know anything about orcharding when I began my experience with trees, and have followed the teachings of the *Farmer* with the result you see before you."

It was only a word by the wayside, but I felt called upon to send the item to you as encouragement in the labors you undergo, which we all know are protracted and severe at times, and we presume often unremunerative like the farmers' labors; but let us continue to cast the bread, the waters will rise sometime. Q.

Horticulture.

Pleasure Grounds and Greenhouse.—June, 1881.

By W. D. BRACKENRIDGE, Florist and Nurseryman, Govanstown, Baltimore Co., Md.

Pleasure Grounds.

Lovely, fascinating June. Lovely because she introduces herself to us bedecked with garlands of roses and wreaths of spiræas and fragrant honeysuckles; while accompanying these, coquetting as they do, concealed among the branches of trees and the lively green of the yet tender foliage, the feathered songsters delight our ears with their warbling notes. Such natural outgoings of nature we say are fascinating. Who would not therefore desire to enjoy a country life, with all its varied attractions? And we can imagine that it would only be such whose taste for the beautiful had become blunted, or have never opened their eyes fully to the many charming objects so freely bestowed; or else have never studied thoroughly how a life in the country during the summer months can be spent pleasantly to themselves and to those by whom they are associated.

In many instances with those who retire to a suburban—or truly country retreat, their tastes and enjoyments are marred by the lack of proper help to keep everything in order, and this may arise from the lack of sufficient means to secure a responsible person for that purpose. But we would here say, that from personal knowledge, the majority of persons presenting themselves for such situations are mere skulkers or charlatans, and whose tendencies are pretentions of knowing a great deal, and taking good care to do but very little, and this is just where the trouble comes in when one wishes to enjoy the fruits of a country life; we refer to it here with reluctance, and would advise such as are fortunate enough to secure reliable help to encourage the same by material acts and words.

Presuming that all planting of trees, shrubs and flowers has by this time been finished, then the principal work to be attended to during the summer will be the keeping of every place neat and clean, and first of all road and walks should be hoed, raked and rolled frequently, as nothing sets a place off more than well kept roads. Should the weather prove wet the grass on the lawn will require to be cut at least once every week, but the time between the cuttings will have to be regulated pretty much by the condition of the weather. To make hay of the grass, or pasture a cow on a lawn near a dwelling, is in bad taste, and not consistent with good keeping. All animals, as sheep, deer and goats, ought not to be permitted to range on a pleasure ground, as they will browse upon and destroy all shrubs, plants and small trees.

Vines and creepers on porches and summer houses should have the young growths thinned out and neatly tied up; many persons tack up their vines to wooden porches with nails and shreds of cloth or leather, but this injures the wood work; it is better to use galvanized wire, run through long staples. One of the neatest vines for a porch is the Japan Akebia quinata. But if an unsightly brick or stone wall is to be covered we know of no plant better adapted for this purpose than the Japan Ampelopsis Veitchii; it is a rapid grower, and where there is no whitewash clings fast to any rough wall, and then the leaves assume a beautiful hue in the autumn; no one who has a suitable place should fail to possess this truly elegant plant.

The simple business of shearing hedges should be attended to towards the end of the month, we mean such as are composed of Pyrus japonica, Pyracantha, Privet and Osage Orange; these, and the Arbor-Vitæ, Norway and Hemlock Spruces we trim in early spring, but the summer trimming of the four first is to keep them neat, as well as to cause them to thicken up by lateral branches and spurs; and this summer trimming is particularly effective in causing the Pyrus japonica to bloom profusely in spring, acting, as it were, on the same principle as the pinching back of the young shoots of pear trees, causing fruiting spurs to be produced.

As we have said heretofore, the form of a hedge should be like that of a reversed letter V, narrow at top and broad at base, so that the whole side will receive abundance of light and air. The many table-topped hedges we see are a blur on horticultural and agricultural management, and present no barrier at base to prevent small animals from passing freely through them.

Greenhouse.

By this time the majority of the hard wooded plants will have been moved out of doors to some sheltered spot, where they ought to be set on a bed of ashes, or partially plunged in the same; this ash bed should be thick enough so as to prevent worms from getting into the pots. In dry weather a good syringing over-head with pure water will keep insects in subjection, and at the same time refresh the plants.

Such articles as may be desirable to retain under glass will require the atmosphere in warm weather to be kept humid, while a partial shade should be given; a heavy shade weakens the growth of plants.

We cannot mind at present of any special work to be performed inside, save the training and and tying up of creepers, and shifting of some favorite soft wooded plant as it advances in growth. We have heretofore enlarged on the cultivation and reproduction by spores and division of the plants of that beautiful tribe Filices or Ferns, and we ask our readers to continue to give due care and attention to these invaluable adorners of our conservatories.

How to Grow Pelargoniums.

Messrs. Editors American Farmer:

Recently while visiting some of the leading green-houses in the vicinity of Baltimore, and seeing *the Pelargoniums* I came to the conclusion that this beautiful family of plants had not justice done them, for they amply repay any extra attention they may get. My mode of growing them is very simple, it is in substance as follows: I find the best time to propagate these plants is

when they are done blooming, which is generally about the end of May or beginning of June. The best place to strike the cuttings is in a propagating house, but as every one may not have such a convenience, they can be successfully propagated in an old or spent hot-bed, first removing the soil and re-placing it with a layer of coal ashes to keep out worms. It will also assist to absorb the moisture from the waterings, and help to prevent damping off. We generally use boxes and find them most convenient. The size we use are 12x15 inches, and 3 inches deep on the inside, made of ½ inch white pine; they will last three years when taken care of, and can be used for other purposes in the green-house. They have several holes in the bottom, covered with pot shreds, in fact the bottom of the box, or in other words well drained, and then filled with a mixture of river sand and loam, say about ½ loam, then give a gentle watering to settle the whole. We prefer the short side shoots that have not flowered to make the cuttings, and they ought to be cut off close to the stem with a sharp knife. Cut off the bottom leaves leaving only the two top ones, then put your cuttings in a shady place for an hour or two at most, to dry up the wound. Then take your cuttings and with the assistance of a dibble, make a hole for each cutting; after you insert your cutting press the mould firmly about them. When your box is filled give the whole a gentle watering, and set on one side to dry up the moisture on the leaves and surface of the box, then put them in your frame, and shade carefully from the sun and even the light for a few days. Reduce your shading gradually, using it only during bright sunshine. A little air may also be given by tilting up the lights behind. The cuttings must be frequentlv examined to see if roots are forming, and as soon as they are they must be potted singly into two inch pots, in loam and well decayed leaf mould in equal parts with an addition of river sand. When you have finished potting replace in your frame and renew your shading, but do not use it any longer than is necessary; give plenty of air to prevent them from getting spindling.

To have bushy plants you must nip out the top bud, then the lower ones will break, and as soon as they have made three or four leaves, stop them also. By this time your plants will be ready to receive another potting, and then be removed to the open air. Plants you had all the winter, and wish to keep them over, cut them down as soon as they are done blooming, put them in a frame, let them have a fair watering about the tops rather than the roots, put on a sash when they commence to break, give air gradually and plentifully. When they have made an inch or so of growth, take them to the potting bench, shake them out and cut off any of the dead or decayed roots that may appear, and put them into pots of sufficient size to hold the roots, but do not overpot them. We use a compost of loam and leaf mould, (equal parts,) with a little cow manure, thoroughly incorporated, and sand enough to make it of an open texture. When you have your plants potted, place them in the frame, keep them close until they have made roots in the new soil, give air gradually, but when they have made an inch or so of growth expose them to the open air. These plants will require another potting when they have their pots filled with roots. We put these plants into the green-house the last of September or early in October. Place them on shelves near the glass so as to make a stocky growth. If any shoots show a disposition to outgrow any of the others, it should be stopped, and the whole plan kept of uniform size. They should have plenty of air, the temperature of the house not rising over 50°, and not lower than 40°. They require to be frequently smoked to keep off the green-fly. When the pots get filled with roots, they may be stimulated with a little manure water, being careful to use it sparingly, or it will speck the foliage. We use about a pint to a two gallon pot of water. M. C.

Broom Corn.

In answer to an inquiry, we would say that this may be grown wherever Indian corn is, and it is planted at the same time; make the soil mellow, and mark out the hills so they will be two and a half feet one way by two the other; or if in drills, make them three feet wide and allow the plants to stand much thicker than for corn. In hills a dozen seed are planted, and seven or eight allowed to stand. It is considered that the finer brush of thick growth is best. The plants are small at first and the cultivation should be commenced early, and the ground kept clean, frequent stirring adding largely to the product. The after management we will refer to later. The product sells well in this market.

The Cultivation of the Native Grape.

The following very interesting article is taken from *Vick's Magazine.*

The great obstacle to successful Grape culture is ignorance of correct principles and methods of training and pruning vines; this not only deters many from any effort to raise Grapes, but defeats those who make the trial without a sufficient understanding of the vine's requirements. With the hope of being able to offer some assistance to amateur grape-growers, we shall endeavor to give some explicit instructions to guide them in their future attempts to have

> "Vines with clustering bunches growing,
> Plants with goodly burden bowing."

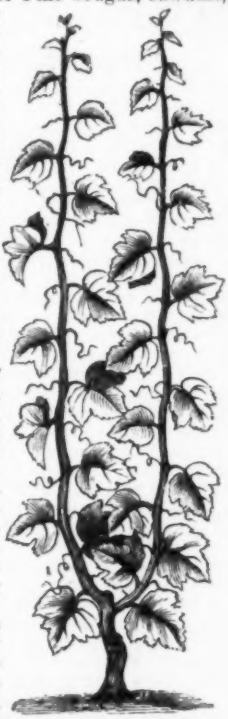
Some one may ask why the vine needs so much attention, and may point to the Apple and the Pear that need but comparatively little pruning, to the Peach, requiring still less, and the Plum and the Cherry that are quite impatient of the knife. The reply is that the character of the vine is such that it demands this care. A vine left to itself rapidly extends its branches in every direction; it produces its fruit on the wood of the same season's growth, and on that only; consequently, in a very few years, with no pruning a vine would consist of long, straggling branches, extending a hundred feet, more or less, and bearing a little fruit on the new shoots at its extremities. As this is a state of things impossible to allow in cultivation, the gardener's art seeks to

confine the vine in a small compass, and to obtain the greatest amount of fruit possible in the space occupied. To successfully accomplish the achievement here proposed, due regard must be had to the natural demands of the plant, and every operation must conform to the laws that govern it. As already noticed, the fruit grows only on the new wood, consequently, the end to be attained is the annual growth of new wood confined to a definite, limited space. A great variety of methods of pruning have been practiced, all with the same end in view, and with varying success, according to the faithfulness with which these methods adhere to the natural principles controlling the vine's growth The directions now to be given are entirely practical, have been thoroughly tested, and their observance will ensure full crops of well-matured fruit, under ordinary conditions.

In order to present in full the details of training and pruning, it is necessary to commence with the planting of the vine and trace it through its successive stages of development. Preliminary to this, however, a few thoughts may profitably be given to the best situations for vines, suitable soils and their special preparation.

VINE ONE YEAR TRANSPLANTED.

As a rule, the best exposures for the vine are southern and eastern; when necessary, an exposure to the west may be employed, but one to the north should be avoided. For vineyard culture there are many places adjacent to bodies of water, having a western slope, that are very suitable, but, unless there are peculiarly modifying conditions, an exposure to the west should not be selected. The south and east sides of a fence or building are favorite locations in the garden, and these places might be used very generally to great advantage for vine growing. If one will use his eyes a little with this subject in mind, he will be astonished to discover how many spots on every hand might be turned to profitable account with vines. A warm and well-drained soil is needed to produce good Grapes, but it is supposed that this end has been attained in most garden and residence lots, as it is a condition as essential to human health as to the welfare of plants. The vine is called a gross feeder, and, unless on new and virgin soils, it is best to make ample preparation by heavy manuring, as well as by deep tillage, before planting. There is no fertilizer better than well-rotted stable manure, but in its absence any general fertilizer will be valuable, and bones, ashes, and superphosphates as specialties. The question is often asked whether it is best to plant vines in the fall or spring. We know of no reason why vines may not as well be planted in the fall as in the spring, in any part of the country, if the work be properly done. Fall-planted vines require a mulching or covering of leaves, Spruce or Pine boughs, sawdust, brakes, marsh hay, or some material that will secure them from severe freezing; after experiencing a temperature of 10° to 25° below zero, repeatedly, as most of us have during the past winter, the reasonableness of this suggestion will be readily perceived. Aside from extreme cold, however, great damage is done to newly planted vines by repeated freezing and thawing, as thereby they are lifted and thrown wholly or partly out of the ground, and thus either killed outright, or so much injured as to be worthless. Fall planting has this advantage, that the injured roots having time to callous are ready to start a new growth at the earliest opportunity in the following spring.



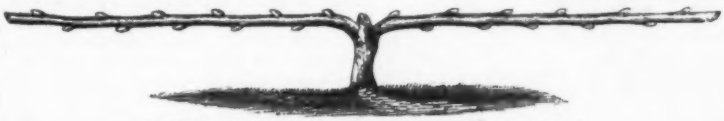
VINE TWO YEARS TRANSPLANTED.

A very erroneous idea is held by many persons in regard to the best age of vines for transplanting, thinking the older and larger they are the better; we would on no account select a vine over two years old, and, ordinarily, well-grown yearling vines are preferable to older ones. The illustrations here presented give the general appearance of one year old vines.

In transplanting a vine, it should be set at least two inches deeper in the ground than it formerly stood; a hole should be dug sufficiently large to take in all the roots and allow them to be spread out straight without cramping or crossing each other. Although the roots of old vines often run quite deep, yet young vines extend their roots laterally at no great depth; consequently, a young vine should have its roots spread out so that they will be about six inches from the surface.

When transplanting is done in the spring, the tops should be cut back to three eyes; but, if in the fall, the vine may be left entire, and early in the spring all but the three lower buds rubbed off. When there is no longer any uncertainty about the growth of at least one eye, the others may be rubbed off, and preferably the lower should be left. The aim now is to obtain the growth of a single strong shoot. A stake should be driven down beside it to which to tie it, from

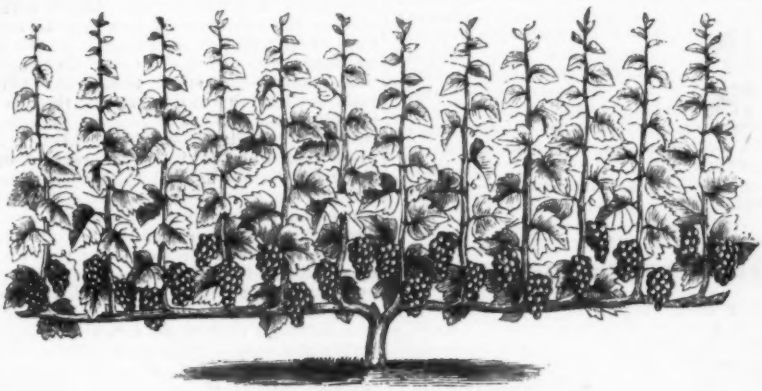
time to time, as it grows; and at the end of the season there will be an upright plant, or, in vineyard parlance, a single cane, from two to four feet high, according to the strength of the young vine, the condition of the soil, and the character of the weather. In the spring of the following year, if the cane is a strong one, it is to be cut down to the three lowest eyes at the base, but if a weak one, it should be pruned to two eyes; in either case, one of these eyes is left for precaution, as in the first, two shoots only are allowed to continue their growth, the other one being



VINE SPRING OF THIRD YEAR WITH ARMS EXTENDED.

rubbed off when it is certain they are sound, and in the other, only one allowed to grow. These shoots are to be kept tied up in an erect position as they grow, and at the end of the second summer the vine will consist of one or two strong canes. The following spring a two-year-old single cane should be pruned precisely as directed for a strong cane the year previous, raising two canes from its base. The two cane vine, if strong, may be expected to produce a little fruit this season; if not strong, the canes should be cut down to single eyes and two strong canes reared.

Supposing the vine with two canes to be a strong one, the third year it may be pruned as will be soon explained. The canes are now to be laid down, in a horizontal position, extending in opposite directions from the main stem, and will appear as shown in the illustration. The shoots in this position are no longer called canes but arms. Here it will be observed there are six buds on the upper side of each arm; from each of these buds will grow an upright shoot or cane A strong-growing vine will form its buds about six inches apart, which is a proper distance for the uprights, or canes, to stand; when the buds are closer every other one can be saved and the others rubbed off, as in this case, in which the lower ones are to be removed; what is wanted is that the canes shall stand from six to eight inches apart. All the length of cane beyond that required for the six buds should be cut off before they are made to assume their positions as arms. The young canes, as they grow from each arm, will set fruit, and two bunches this season may be allowed to each one, and the fruiting vine will appear somewhat as shown in our sketch.



THREE-YEAR-OLD VINE IN FRUIT.

Vegetable Garden—June.

In this month there will be very little sowing required—succession crops of sweet corn and beans, late tomatoes and potatoes will be about all. The principal work will be gathering early vegetables and cultivating growing crops. The prevailing drought begins to look serious, but a timely rain may yet start many seeds that have so far failed to come up. The rain will be *timely* if it ensures the very promising strawberry crop; and if it does that it will do many other bright things in other parts of the garden, but it will have to be a soaking rain to save things on our thin soils. The weather has been favorable in some respects. There can be no excuse for weeds being seen in these dry times.

As soon as crops of peas, spinach, cabbage, beets, &c. are harvested the ground should be got ready for late crops with the utmost dispatch so as not to run the risk of losing a shower for transplanting. After harrowing and rolling draw the marker over the ground and all will be in readiness. Your land may be rich, but if you have a pile of manure treasured up for future use my advice would be to use it now I have never seen much good come of the practice of keeping manure from year to year. A gardener puts his employer to great expense for manure, and piles it up against the fence. Something

happens, and the expensive man has to leave. His successor gets along nicely and cheaply, at all events as long as the big heap lasts. I have just seen this thing going on and it is not the first time. Besides manure cannot be kept so long outdoors without great waste.

I am obliged to use a seed-drill for most of my crops but if time permitted and it were not so laborious, I would sow most things by hand. I would sow thickly too, for I have no great faith in seedsmen, although they are no worse than other people; but depend upon it with regard to some of their seeds, "he that soweth sparingly shall reap sparingly." Beans are difficult to sow evenly and rapidly, and planting them singly is tedious. Perhaps the best way is this: having opened the drill with a small double-mouldboard plow, walk erect alongside, the arm hanging motionless. The beans are held loosely in the hand and shaken by a slight movement from the wrist. With a little practice one may sow evenly and rapidly without ever looking at the beans. You can *feel* yourself sowing correctly. A handful will sow from 12 to 16 short steps. Peas 7 to 10 steps according to the size. Gardeners can sow fine seeds as rapidly as any drill, but with these they must stoop.

Betwixt the drouth and the fly it is very difficult to raise cabbage plants for the late crop. Soot is the best thing I ever tried and should be saved for that purpose. I dug a piece of ground ten days ago, sowed it thickly with cabbage seed, using plenty of guano to give them a quick start. On this I put a frame with the sashes left open at top and bottom. They have been regularly watered and shaded from 10 o'clock to three. Not a single fly has yet been seen on them although they are hourly expected.

Those making large plantings of late tomatoes will save themselves much trouble by putting two plants in each hill. If both grow it is easy to pull one out, and is a small matter compared with re-planting.

JOHN WATSON.

The Orchard and Fruit Garden.—June.

In order to have fruit of larger size, finer quality—of apples and pears more particularly—a thinning out during this month of the weakly and inferior specimens will be necessary. Some varieties are inclined to over-bear—that is, they set more fruit than the trees are capable of properly maturing; the timely removal or pulling off of one-fourth to one-half of the first of such, before the trees have exhausted themselves in their efforts to nourish and develop it, will prove beneficial to the remaining half, to the tree, and to the party who receives the profit of the crop. Allow not a single tent of caterpillars to escape destruction.

Suckers thrown up from the collars of fruit and other trees, as also water sprouts thrown out along the main limbs, should all be removed this month. June is *the* time for this attention to be given in order to reach the best results.

The washing of the trunks and main limbs, as high as can be conveniently reached, with soap-lees or ordinary whitewash, will be productive of good, in destroying the larvæ of insects, mosses, &c., that attach to the bark, besides it renders the bark smooth and healthy, and the alkali contained in such washes is carried to the roots by the rain and affords some nutriment for the trees as well. Grafts set earlier in the spring will require looking after; the cement or wax will, by the expansion of the limbs or trees in their growth, not unfrequently crack and leave holes for the admission of air and water to the injury of both stock and graft in such cases; a little touching up with additional wax will avoid such danger. The sprouts that always put out so freely below the graft must from time to time be rubbed off, so as to insure a more vigorous growth of the grafts.

Peach, plum and other trees planted during last fall and spring can be gone over this month, and sprouts that sometimes are thrown out below where the trees are budded or grafted removed, and other superfluous sprouts can be pinched or rubbed off at same time, leaving only such as is desired to form the head of the tree.

In the fruit garden the hopes of a month back are already beginning to end in fruition. The delicious strawberry now gladdens the eye and gratifies the palate, and to him who intelligently gave liberal care is liberal reward returned; and just here we regard it pertinent to refer to the *craze* prevailing among propagators for new varieties, which would be commendable, if the truth was all set forth regarding the wonderful merits (?) of the strangers where they are being introduced, but unfortunately this is rarely the case, as the practice as it now prevails is to produce these wonders on paper only, and by extravagant and untruthful descriptions catch the unsuspecting—by selling plants at exorbitant rates—of kinds greatly inferior to the older ones already in the gardens of most people who grow strawberries at all. We have taken occasion more than once to warn the readers of *The American Farmer* against the encouragement of this practice by investing in plants; better for all concerned to go a little slower and avoid the weakening of business confidence. If you have a variety that is satisfactory—one that produces good fruit and plenty of it—such as is enjoyed by your families, stick to it until you are *quite sure* you *know* of a better one; proper attention and thorough culture do much for any strawberry; it is poor soil and poor culture that make poor berries, notwithstanding the wonderful (?) achievements in the production of great and good (?) varieties; within the last few years the Hovey's seedling (one of the oldest American varieties) has been taking premiums at the horticultural exhibitions. Now this is a fact that carries within itself a text, from which every thoughtful lover of strawberries can think out a sermon that should prove profitable to himself. It is not only strawberries that are grateful for good care and culture; fruit of any kind, and particularly all small fruits, require and must have the best of culture to produce the best results, and to him who attends the fruit garden, the fact of being in daily contact with the plants will suggest many details and turns in their management that never reach to the dignity of suggestions or instructions in the papers, but which are nevertheless rendered important by surrounding circumstances.

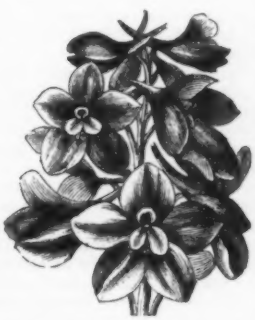
New Deutzia—"Pride of Rochester."

This is a new variety raised from Deutzia crenata flore pleno, and producing large double white flowers; the backs of the petals being slightly tinged with rose. It excels all the other sorts in size of flower, length of panicle, profuseness of bloom and vigorous habit. It originated at the Mount Hope Nurseries, where it is regarded as a charming acquisition.

Hydrangea Otaksa.

This is a comparatively new introduction from Japan, and very beautiful. Its foliage is of a beautiful deep green color, and the tusses of flowers it produces in July are immense in size and very numerous. The plant is not entirely hardy and should have some protection in winter; it being best preserved by removal to a cold pit or cellar.

Delphiniums.



Delphiniums, or Larkspurs, though old fashioned flowers, are, as Vick says, valuable plants; their foliage clean and pretty, habit strong and good, the flowering branches often four feet in height, the spikes of flowers six inches or more in length, and their colors bright. The seed may be sown in spring and by autumn strong plants will be grown, which will flower next year, they being perennials.

An Inquiry.

Messrs. Editors American Farmer:

I avail myself of your kind and most liberal offer, "to answer questions as to the application of chemical science to the practical arts," and most respectfully ask to be given an economical process by which the hoofs and small horns may be reduced to a good mechanical condition as a fertilizer, (similar to ground or dissolved bone) without dissipating their gelatinous or nitrogenous elements? G. N. H.

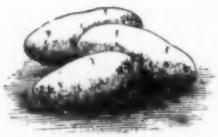
REPLY—Cover the hoofs and small horns in a large wooden tub, (a water-tight barrel sawed in half will answer) with oil of vitriol and digest—stirring sometimes with a wooden pole until dissolved. Then add a finely powdered rock phosphate or natural bird guano slowly, stirring all the time until the article is perfectly dry—that is, in such a mechanical condition as to run through a drill at once. This will give you soluble phosphoric acid as well, as it will be the only process to render the nitrogenous substances of the hoofs and horns in a form to be directly soluble in the soil and available as plant food.

LEHMANN & MAGER.

Late Potatoes.

BROWNELL'S BEAUTY.

BROWNELL'S SUPERIOR.



BURBANK'S SEEDLING.

IMPROVED PEACHBLOW.

DUNMORE.

GENESEE CO. KING.

As many growers put in their main crops of potatoes this month the descriptions and engravings from *Vick's Guide* of some popular late sorts will be interesting and serviceable.

Brownell's Beauty, tubers medium to large, of a reddish color, eyes few and small, nearly even with the surface; shape oval, somewhat flattened, very productive, an excellent keeper, which makes it valuable for market; for table use it is unsurpassed.

Brownell's Superior, tubers medium to large, oblong oval, skin of a peculiar dark copper color, very smooth, eyes few and small, quite even with the surface, very productive indeed, and this is its principal merit.

Burbank's Seedling, a white skinned variety, tubers long and slim, with but few eyes slightly depressed, is immensely productive; its size and general appearance are very much in its favor for marketing.

Improved Peachblow, one of the best late varieties; a very vigorous grower, the vines completely covering the ground; tubers round, of medium size, very uniform, resembling the Jersey Peachblow, fully equal to that well known variety in quality, and will produce nearly double the quantity per acre. A most valuable variety.

Dunmore, tubers medium to large, skin white, slightly russeted, eyes few and small, quite even with the surface; very productive, and with ordinary culture will produce an immense crop.

Genesee Co. King, tubers of medium size, round, flesh color, with pink eyes quite deeply set; a good keeper, very productive; for table use it is one of the best.

What Shall We Do With the Crow?

Messrs. Editors American Farmer:

Were a farmers' convention called to decide this question it is likely that there would be quite a division in regard to it. While one would unhesitatingly condemn him to be shot as a thief and pest, another would be equally loud in proclaiming his good qualities for usefulness. In my opinion both are wrong. Where his capacity for doing mischief to the farmer can be controlled he is really the latter's friend; if, on the other hand, he is allowed to have his own way the just wrath of the hard-working farmer is apt to fall upon his head.

My experience last season was such as led me to regard him as one of the worst pests the farmer has to contend with. They began operations early in the season by pulling up nearly half my corn, seeming to have a preference for the sweet kind, as I was forced to plant one lot entirely over again, and paying but little attention to the ordinary scare crows set up. About this time my turkeys and Guinea fowls were busy making their nests in any out of the way place they could find. The crows always managed to find the nests before I did. I have seen them sitting on the fence patiently waiting for the hen to come off, and it was the one who got there first that carried off the egg. They are as fond of young chickens and turkeys as hawks. A neighbor told me of a crow that alighted among her chickens and helped eat their dough, and upon leaving took one home with him to see his family. Altogether too sociable.

Later on in the season his capacity for mischief began to be felt again; holes were found pecked in most of my early cantaloupes, ruining them and causing much loss. When the tomato worm appeared I was in hopes that he would redeem his lost character, but the number of tomatoes eaten along with the worms I considered amounted to more than his wages. I would remark here, however, that where a tomato patch is away from too much observation they will usually keep it clear of worms. He always has the look and manner of a thief, and would not probably do such a favor intentionally.

My final trial of patience came when my corn began to form in the ear. At this season and until the spring following they appear in flocks of thousands, stripping the husk from the ears and greedily devouring the tender grain. A late field of sugar corn suffered most; all left upon the stalks for seed was eaten up. Crop corn in the shock was next attacked, and every ear in sight devoured before it was dry enough

to husk. Now, Messrs. Editors, can you blame me for forming an unfavorable opinion of the crow? This opinion, however, has been somewhat modified this spring. I have watched him in order to learn of his good qualities. As a result I find he has many. When doing my spring plowing I noticed him busily following behind and picking up such grubs and worms as were turned up. He seemed especially fond of the tomato worm chrysalids, which were very abundant, thus materially lessening the number of "horn-blowers" for this season's crop of eggs. That he is found of most kinds of worms and insects, besides young birds and birds' eggs, is beyond a doubt. He is the avowed enemy of that annoying pest, the white grub, so troublesome to strawberry growers. They can detect them at work beneath the surface and promptly destroy them. While working out a young patch to-day I noticed that the grubs were very abundant and destructive; I also observed a great many places near the plants where they had been taken out, and always found the tracks of crows near the spot. This, aside from the fact that I have been fighting the insect tribe for several weeks past, in order to gain the mastery, inclines me to think more kindly of the crow, and but confirms what I have said in regard to controlling his actions. The question here arises as to how we can do this. I have found relief this spring from his corn pulling propensities by stretching strong twine upon high poles around a field of early corn, and have been unable to find a single hill disturbed, although another field of crop corn near had to be heavily replanted. The crows being of a suspicious nature will not alight in a field thus enclosed, thinking it a trap set for them. I hung bright pieces of tin at intervals along the string, thus adding to its formidable appearance. Some of my neighbors smear their seed corn with gas tar and roll in plaster, the crows pull up a few grains thus treated and give it up in disgust. Still others practice scattering corn about the fields to feed them, but they seem to prefer the soft grains to the hard, dry ones scattered on top the ground.

Their cunning is proverbial; they know a gun from a black stick in the hands of a man, and about how far it will "carry," too; there is always one or two on the watch, who quickly give the alarm upon the approach of danger, and it is hardly worth a person's time to try to get within gun shot of them. They are said to live to be a century old, and when we consider their capacity for mischief during this time, its force is appalling. But enough of "crowology;" we hav'nt settled the question yet whether he is a friend or enemy; well, we don't propose to, we will still leave that an open question.

A. A. Co, Md., May 20th. R. S. C.

NOTWITHSTANDING a week of somewhat favorable weather, the *Mark Lane Express* says "the English grain-crops do not stand well for the harvest." Vegetation of all kinds is in a somewhat backward state all over Great Britain, and a copious rainfall is needed. "Without it," says the *Express*, "the lookout is uncertain and unfavorable."

The Grange.

MONTGOMERY COUNTY GRANGE, No. 7, held its regular quarterly meeting at Barnesville, 28th April. The fine weather and the well known progressiveness of that neighborhood bringing thirty delegates and a number of visitors from all sections of the county, in spite of the busy season. W. Master Young read an article on the protection of sheep husbandry, which was referred to next meeting to give time for careful consideration. A very general expression was given to the importance of using lime, though the members differed as to the quantity and mode of application A committee was appointed to prepare an article for publication on the abuses of our public schools. W. P. Master McDonald installed the officers for the ensuing term of two years. W. Lecturer Farquhar read an admirable practical essay, using as his text the old adage "take time by the forelock," and showing that the farmer, as much as any other business man, must keep ahead with his work to thrive. Adjourned to meet 28th July, at Browningsville.

The New Movement.

The Patrons of Maryland, since the organization of the State Grange, have done some good and effective work. Some of it has been unseen, like that of bringing its members from various sections of the State into more intimate personal and social relations, and thus by a freer and more unrestrained intercourse smoothing down imagined differences in pursuits, and demonstrating clearly that there are no essential ones between the tillers of the soil.

The first result of this more intimate connection was the establishment of the Grange Agency, now an established success, saving to those using it thousands of dollars each year, and in the near furtue, perhaps, to enter upon a more enlarged sphere of usefulness than ever before.

Those who were in Annapolis five Winters ago will recollect the smile of incredulity that played over the faces of the members of the State Grange when the project was started of an elevator "for water-borne grain." Yet, although Bro. Hardcastle in the next session of the Legislature was overborne there by the "Constitutional scruples" of some, and by the hostility of Baltimore merchants in his efforts to get the State to build one; although the effort at the last session of that body failed to secure one of the State Tobacco Warehouses for the same purpose, still the movement gained strength as its necessity became more apparent and the needs of the tide-water farmers grew more urgent, until its enemies have become its friends and supporters, and *now* it may be regarded as an accomplished fact. Verily the "mustard seed" has become a tree through the skillful management of Patrons.

Now the Grange regarding the elevator as a fact is called by the Worthy Master to an advanced step in the same direction of direct benefits by the establishment of a "Farmers' Bank," and the whole question of its need and expediency has been referred to a Committee to

report to the next State Grange. This is right, and it needed no reference to a "California institution" to prove either its necessity, or the benefits to be derived from one. Bro. Smedley, once Lecturer of the National Grange, in his "Manual of Jurisprudence and Co-operation of the Patrons of Husbandry," published in 1875, took grounds in favor of one, holding that banks as at present conducted "*afford very little* actual *benefit to the producer*." "For," says he, "take any country village containing one or two National Banks, and inquire who are the men who receive the business accommodations from them, and it will be found the rule that it is the merchants and the dealers in agricultural products. From any ordinary country town take out twenty merchants and business men, and then take an equal number of farmers of equal responsibility, and as a rule it will be found that the farmers, however much at certain seasons of the year they need bank accommodations, rarely receive them; while the business men, so called, as a rule depend upon the banks for a large percentage of their working capital. However sorely the planter, farmer, or feeder may need bank accommodations to prepare his crops for market, the banks usually give the preference in their discount favors to the men whose business it is to buy and sell."

If this is true of far off Iowa how much more is it true of this State, where local banks are few, and favors from city banks are not to be had without city endorser. The truth is farmers and planters here are under the control of their commission merchants, and cannot easily ship elsewhere, even to better markets, without increasing their enmity.

A wisely founded bank, whose loans should be made to farmers alone, and whose discounts should be timed to suit their business, would be a boon of incalculable advantage.

A plain farmer made the Grange Agency a success. They have managed banks successfully elsewhere, and there is enough talent among those of Maryland to make one here a success. With the elevator to receive and hold corn, the planter can ship at his leisure and wait for the coming of those months in which experience has demonstrated that his products are highest, using his elevator receipts to meet his current expenses.

The sooner the producer learns to depend on himself and those like him in every transaction of his business, fertilizers, shipping and selling his grain, the sooner he will become and the quicker will he feel himself a *freeman*, with "none to make him afraid." In the accomplishment of this end he will find the Agency, the Elevator and the Bank of very essential aid. These three institutions will materially assist him out of "old ruts," and give him newer and more advanced ideas of this bustling world, of which he forms no insignificant a part now, but of which he will then become the motive one. Farmers are too apt to forget that it really consists of two distinct classes, the leader and the led. On their own active, persistent exertions depends the solution of the question to which class they will continue to belong, the last where they now belong, or the first to which they may attain. Let us advance. A.

Russum, Md., March 9th.

Home Department.

The Homes of Our Working Men.

Country homes of every class are of more consequence to the dwellers therein than those of the cities, inasmuch as in the latter there are many resources for recreation and pleasure, both for men and women, which compensate for whatever may be deficient in these homes. It is true that we have the incomparable delights of woods and green fields always inviting to the weary during a part of the year, and none are wholy destitute of other sources for enjoyment outside of their homes, but as compared with residents of the cities the opportunities are few, rendering us therefore more dependent upon what our own fireside affords. Of course this is largely overcome by facilities for going freely about among friends and neighbors. If there is abundant leisure, together with unlimited means, the country resident has socially greatly the advantage over the citizens of the same class, and in the reverse ratio the working people of the cities have the advantage over the country laborer; their working hours bringing them in contact with other men, and their leisure hours may so easily be passed among those entirely suited to their taste, all of which manifestly makes them to some extent independent of home for enjoyment. While this condition of things is of questionable advantage in some respects, yet if wisely used it gives more thorough rest for mind and body, and often brings to bear influences which stimulate them to excel in their vocations. The absence of opportunity for deriving such benefits as may be had from association renders any advancement on the part of the farm laborer very slow, if not impossible, and this is doubtless one reason why good reliable help is so hard to find in the country. Few men who have brains enough to be of real use to us have sufficient attachment to the country to remain there under these disadvantages, and there is little else to keep them among us. Yet the farmer can no more carry out his purposes without efficient help from that class than the manufacturer can. The first step the manufacturer takes toward shaping his work is to provide proper homes for his working people, and the wisest of them also provide for their recreation and pleasures—why are the farmers less careful for their interest in this respect?

The complaint in regard to the difficulty of procuring good reliable help in the country is almost universal, and will, I fear, continue to be our greatest grievance, unless we offer some better inducements to the right kind of people to take up their abode among us. It gives a feeling of insecurity to have to depend upon strangers, of whose character and capabilities we know nothing at all until tested. How much better it would be, therefore, if by forethought and care we could secure a resident population of that class upon whom we could rely, and who in all probability would be rearing their families for the future good of the community. This can only be accomplished, I think, by providing homes for them that will satisfy the better part of their nature, and such as will to some extent tie them

to their surroundings. It does not follow that every one must have a house for his help on his own place, this would be impracticable on many of our small farms without so restricting the privileges of the occupants as to defeat our purpose, but when the farm is large enough to admit of a suitable house being well located, and sufficiently remote from the principal residence that it may have its individual rights without danger of conflict, it is undoubtedly a public benefaction to secure thus the establishment of a laborer in the country of one's own selection; and a just provision for the wants of such a family will help toward creating a correct understanding in the community of the requirements of the laboring class. It was remarked to me recently that "Marylanders were slow to provide convenient or tasteful dwellings of this class as compared with other parts of the country." This, as far as my observation enables me to judge, is not the case—it is rather a neighborhood matter. I have seen in Maryland such indications of comfort and thrift in the homes of the laboring class as are only occasionally found north or west of this, and I have also seen the lack of it in districts in those portions of the country such as are found in few localities in Maryland. It is rather a matter of local good or bad husbandry. Wherever good farming prevails, there is evidence of care for the laborer; whereas, ill kept farms are signalized by comfortless looking roadside hovels, with no evidence of home life except a few ragged, dirty urchins whose only playground is the public road; and their mother, arms akimbo, gaping at the passers by, with no sign of water to keep her house or children clean, and no spot from which to coax an additional comfort for her daily provision. Possibly the working head of this house may be paid by his employer such wages as are supposed to counterbalance the lack of a proper home, but pray what chance has a wife to use the income to advantage under such conditions, and what is there in or about such a home to rest a man after a hard day's work, or to lead him to prefer it to the store, or tavern, for passing his evenings? If there is anything human left in children who have grown up amid such scenes, they of course seek other fields of labor, and so it comes about that the community must rely upon stragglers to meet the demands for laborers, or upon a resident force too entirely wanting in self respect to be of much account.

Those of us who are moved to consider the welfare of our working men, either in our own interest or theirs, to the extent of building homes for them, should first select some healthy locality as free from suspicion of malaria as if they were themselves to occupy it. These people cannot afford to be sick, nor can we spare their service for such indulgence; if possible give them the benefit of one or more shade trees near the dwelling already grown, and if the Good Father has not provided the "poor man's fountain," an unfailing spring, have a well dug near the door for their use. Think of the drudgery this will save to all the future occupants of this house, especially to the men who go home tired from their day's work, and who in all probability will have to carry a supply for a wife already broken down by such over exertion as bringing water from a distance imposes.

Appropriate a piece of ground to their use for a garden—where the women and children may have a chance to eke out the daily provision—plant therein sufficient of the standard fruits for the family use, and share such permanent roots of vegetables, &c., as your own garden contains. The help it will be to those who from time to time dwell there will come to be considered of importance among the better class of working men.

Such things cost little or nothing, except the time and thought of the party whose interest is promoted by it, and even they have to make but one instalment, for most of these things take care of themselves if only given a fair start, while every year adds to their value. Have a care that the boundaries of such a home are well defined; the recognition of "mine and thine" is a wholesome discipline for all parties, and the enclosure gives a sense of proprietorship and home feeling. Make the house as pretty as you may feel disposed, both for their pleasure and your own credit, but do not sacrifice pantries to fancy porches, nor clothes closets to ornamental gables. Be as libral as you can with space, and allow for enough division of it to admit of a decent accommodation for the different sexes. Working people want elbow room and breathing space; and when the entire family must gather in one living room, it should be large enough for the older persons to move about without stumbling over the little ones. A shady grass plot near the house is for this reason a special privilege to the tired working man when he can throw himself down to rest, with the children around, yet not necessarily disturbing him, and out of reach perchance of his busy wife's scolding tongue—for alas, a busy hard working woman is very apt to be a scold.

With rural surroundings any home looks pretty that has an air of comfort about it, and seems well cared for; it is therefore not necessary to waste money on fancy trimmings and angles; we can depend on the shade of trees and trailing of vines with lattice screens for embellishment.

All expenditure should have for its first object the comfort and general well being of those we hope to enlist in our interests. Give them as many of the conveniences we value so highly ourselves as possible; it gives the women of the family a better chance to help themselves, and to take care of what the husband provides for them. The wearing apparel will last longer if kept in closets than if hung on nails in the light and dust; provisions cannot be kept without pantry or cellar to keep them in, and the absence of these compels great waste, as well as a system of living from hand to mouth—so ruinous to poor people. Nor can they be expected to be cleanly without water at hand. All of which will enter into the calculations of a man who has the welfare of his household at heart, and will be apt to secure to our service the class of men who are admitted to be our best reliance for help—men with family ties.

CERES.

CORRECTION.—In the article by "Ceres" in the May *Farmer*, on page 187, in the last five lines, "cheap features" should read "*chief features*."

Floors, Carpets and Rugs.

In the last number of the *Farmer* we spoke of simple arrangements for walls and furniture in our country homes; but a very important point—the floor—was not alluded to, because considered a question deserving a little corner to itself. Indeed a very long article could be written on the subject; but we will confine ourselves to a few points of interest to almost every housekeeper. In the first place we will speak of the floors themselves. In many of our old country houses the boards are so uneven and patched that it is not possible to leave them uncovered. Then for covering them use India or Japan mattings; they are so cheap now that almost any one can afford them for the parlor at least; but let it be well understood that the bare floor is prettier, cheaper, and last, but not least, more fashionable. In a room that is not very much used, the stained floor is perhaps more suitable for showing off handsome furniture, &c., but it is quite as elegant and far more satisfactory, from the fact that they do not "track" so plainly, to leave the boards the natural color and apply two or three coats of shellac varnish made very thin with alchohol. It dries almost immediately, does not scratch easily and brings out the graining of the wood beautifully.

Now we will go to the carpets; we all have them and must put up with them until they are worn out, notwithstanding our convictions that they are not conducive to health, and certainly not very cleanly, no matter how neatly and thoroughly they have been swept during the winter, much dust will be found under the edges when they are taken up. For these days of coal stoves and weather strips there is no necessity to have it fit up close to the wash-board; therefore, if practicable, let the carpets be converted into large rugs, by taking off enough to leave the recesses and at least twelve to eighteen inches bare floor all around the room. A narrow bordering can be bought to go entirely around the edge. It need not match, in fact is better not to match, if in style and color it corresponds with the carpet. A very few tacks are required to keep these large rugs in place, and they can be taken up frequently without removing heavy furniture, and given a good shaking, which is worth all the sweeping in the world, with very little more time occupied in doing it, and you will find the bugbear—house cleaning—greatly diminished, as certainly one-half the dirt in our houses is caused by the sweeping of carpets. Even better than these large rugs, where the facilities for heating are sufficient, is the bare floor nicely polished, with numerous small rugs about, in the most frequented and comfortable places; large ones before the fire-place and sofa, smaller by the tables and easy chairs. It *is* rather suggestive of "little islands of rugs," but it is also very suggestive of cleanliness and elegance. With regard to the quality, one's means and surroundings can be the only guide. There are the imported Turkish rugs for those who can afford them—a very excellent imitation is made in this country, soft, durable, not very costly, and yet quite appropriate to almost any well furnished room. Among the novelties in home-made rugs those made of silk scraps are very pretty—nothing but silk must be used. Cut the pieces into strips half an inch wide, and tack all the ends together with strong thread, just as they come, one color after the other, with a very liberal use of black to preserve harmony. Have a very coarse pair of wooden knitting needles, and if the rug is to be round cast on three or four stitches and knit one way all the time; in an hour or two you will find your rug nearly done. For a fringe take the scraps just as you had them arranged for knitting, wrap them rather loosely over a long, smooth, flat stick, and all down one side tack the joining edges tightly together, then slip the stick out and sew the fringe on the rug. A square rug, made the same way except that you sort the colors and tack together each shade separately, then knit in shaded strips of one color, with plain black or yellow strips alternating, and join by sewing together with strong thread. Or the strips may have the effect of squares or blocks of colors and black alternating, care being taken that the colors do not hit where the strips are joined; for instance, if you begin one strip with the square of colors, the strip that comes next must begin with the square of black. These rugs are very pretty and durable, as the dust is easily shaken out. They should be lined with burlaps, or a coffee bag will do very well, if it lies flat. There are many ways of making pretty rugs out of scraps and even of pieces. A piece of gray flannel left from lining a cloak was used with excellent effect, by working long green flag leaves in Kensington stitch of shaded green worsted, with a few bright scarlet flowers, made of scarlet flannel and caught on with shaded scarlet worsted, then lined with scarlet flannel letting the lining project two inches all round and cutting the said two inches in deep points.

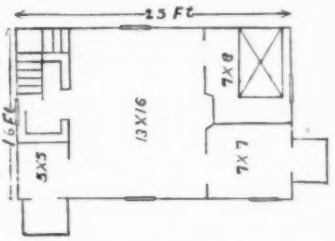
H. C.

Laborer's Cottage.

VIEW OF HOUSE.

The design here given is not intended as a model for the builder, but rather to convey some ideas in regard to proper provision for the home life of that class of people. In order that the principal room may be as free as possible from anything to interfere with the full enjoyment of

it by the family, whose chief gathering place it is supposed to be, there is a small room provided in which the cooking stove may be kept nearly the whole year, and yet warm the large room sufficiently. This room is purposely made too small to admit of its being used for any other purpose, thus compelling the large room to be used by the family for eating and sitting room, instead of its being closed for occasional use and dignified by the name of "parlor," a custom which weak-minded women and irresponsible young girls are too much disposed to adopt, abridging the privileges of the rest of the family, and providing also an exclusive place for the young people to entertain their visitors, which is not always right or proper.



PLAN OF HOUSE.

The front door and entry leave the entrance into the cooking room private, and it would be well to have a shed built over the latter door in order to keep the wood under shelter, and also that the washing might be done there in summer. There should also be a well at a convenient distance from this door, and a hogshead for rain water at one of the corners at this end of the house, as there is not sufficient roof to gather water for a cistern.

The stairs are made to lead from the sitting room, instead of the entry, in order that the children who may sleep in the rooms or garret above may be near the parents, who are supposed to occupy the bed-room down stairs, and also because in so small a house there is necessarily much use for the space above that require frequent journeys for the housekeeper.

The liberal closet under the stairs and the space above stairs, which admits of being divided into two good sized rooms, give ample accommodations for a family of five or six, and yet is not too large for a smaller one.

The ceilings should not be more than 8½ feet, and need not be more than 8 feet. It is a delusion to suppose that a large space provided to hold the over-heated and impure air above our heads is in any way conducive to health, and to appreciate how much this is the case, you have only to mount a step-ladder in a room which has a 10 or 12 foot ceiling, when, if there be heat enough for the comfort of those setting below, it soon becomes intolerable up there. For appearance, the height of a room should be proportionate to the other dimensions, but for economy of heata nd coziness it ought not to be higher than is necessary, yet the escape of vitiated air should be provided for by lowering the upper sash of the window. Cheap provision for such purposes are now in use and should always be adopted, especially in the kitchen and sleeping rooms, or when several persons are likely to sit in a room for any length of time. C.

A Question for "Ceres."

DEAR "CERES:"—The many valuable contributions from your able pen and others emboldens me to trespass on your patience. The question I submit to you is this:—Why is it necessary that farmers' wives must be more closely confined at home than the wives of men of other calling? Why is it they must never say a word about visiting or church going during the summer months? And why, oh why is it that a horse can never be thought of when needed to gratify them in any little expedition of pleasure or necessity? I have noticed when the horses were always busy that they were never too busy for the master of the house to use at his pleasure. His business is *always imperative* and *must be attended to.* How often do we of the gentler sex give up with a patient weary sigh so many little pleasant trips which we had been anticipating for weeks, to find when the time came the horses were far too busy to stop. Yet still if we rebel we are called cross, ill-natured, always fussing, inconsiderate, and I am afraid we all hear the same cry, "well, if you must have a horse take one, but remember I am losing my crop on your account; it is no use for me to try longer, I will certainly not make corn enough to serve me this year." I might say much more on this subject, but I fear it may puzzle a wiser brain than even yours to answer satisfactorily this tiresome *why?* FARMER'S WIFE.

Virginia, May, 1881.

Answer.—There is no denying the fact that men are by nature and education disposed to be arbitrary, and there is nothing in which they are quite so free to exercise this proclivity as in the assumed exclusive proprietorship of their horses. To meet this in anything like a peaceable spirit makes, of course, large demands upon the forbearance and tact which are supposed to be our crowning virtues, and yet therein lies our best chance for overcoming. The statement of this special case we are bound to believe is based upon somewhat exceptional circumstances; very few men would thus deprive their families of all their privileges during the entire summer; if they did, why then I should think it time for the wife to look about for some mode of providing herself with a horse for her own use. When these conditions do exist there must either be great selfishness on the husband's part, want of adaptation on the part of the wife, or extraordinary need for economy of time and horse flesh. I don't believe there is a "Grange" in the part of the country from which this touching appeal to our sympathies comes, or they would have acquired better habits. There is nothing like good hearty grange spirit to take the crotchets out of the hard headed farmer, and to bring his wife into perfect sympathy with him. CERES.

Toilet Covers, Bed Spreads, etc.

Beautiful toilet covers, as well as pillow-shams and bed-spreads, are made of common lace mosquito net and coarse darning-cotton. The designs are the same as those used in Breton lace; simple geometrical patterns are prettiest, and almost any braiding pattern will answer for a guide. The cotton is run in and out through the meshes and returned through the same ones whenever it is necessary to complete the design. Small mats have a border round the outside and are finished on the edge with a button-hole scollop or narrow lace. Spreads and shams are usually worked in stripes. First four threads are run through the meshes, then a pattern is put in; then four more plain threads and a different pattern follow, and these are alternated over the entire width. The distance between the threads and stripes are matters of taste. One row of meshes between the straight lines looks well, and for the balance an open pattern is more effective than a very close and elaborate one. When finished, the net must be lined with colored silk or cambric and edged with a strong lace, or a broad hem may be turned up and run with two rows of cotton and the lining caught to it. The same lace made into an insertion with coarse linen-floss, will be found a pretty and durable trimming for underclothing.

Work for the Month—June.

Vigorous and unremitting warfare against weeds is in order now. Their destruction is insured by frequent stirring of the soil, and which manures the growth of the crops as well.

The Corn Crop.—To keep the soil loose and permeable to air, heat and moisture, thereby making plant food more available, and keeping under the weeds which grow as quickly as the crop and exhaust as much moisture from the soil, keep the cultivators agoing.

Potatoes.—The crop if not planted should go in from the 10th to the 20th of the month. If planted earlier the tubers will be forming just at the height of the customary spell of mid-summer dry weather. The provision required for a good crop is good land and thorough cultivation. Sod land, or such as has considerable vegetable matter in its composition suits it best, it making a coolness very grateful to this tuber. Bone dust, ashes, super-phosphates and mixtures of lime, ashes and plaster are all good applications for the potato. So is, especially, Peruvian guano. Rough, fermenting manure ought not to be used, it inviting disease. Cut the seed a day or two before planting, and allow to dry in a cool place, dusting the cut places with plaster.

Tobacco.—It ought now to be presumed that planters have followed our advice up to date. The next business in order is to finish up planting as fast as possible. Where plants are scarce we would recommend the planting of the Irish potato. Potatoes may be planted up to the first of August. Prizing is now also in order. We would advise care in packing tobacco, upon that now chiefly depends the money value of the article. All tobacco when mouldy must be shook out, sunned and dried before packing. The peculiar aroma that belongs to tobacco in its highest condition cannot be brought out without great care. We beg leave, especially, to say a word of caution to our Maryland friends: Because your tobacco is now below the point of certain profit, a little more carelessness and you had better stop planting.

Root Crops.—There is still time to put in crops of these, of the value of which we cannot speak too highly. Sugar Beets, Carrots and Mangels may be sown. The work should be done, however, as soon as possible, and on land thoroughly prepared. Directions for their cultivation have been heretofore given. Ruta Bagas are sown here from the 20th of June to the same date in July. They are sown preferably in drills, the yield being greater and the working thereby facilitated. The drills may be about two feet wide and the roots thinned out to stand, say twelve inches apart. Work early and often to keep the soil mellow and destroy the weeds.

Hungarian and Millet.—Early this month these crops can go in, and on good land they are invaluable for forage. From three pecks to a bushel of seed to the acre is sufficient.

Fodder Corn.—Sow this from now to beginning of August. What is not needed for use green may be cured.

Hay Harvest.—Both clover and orchard grass should be cut as soon as fairly in bloom, say when not over one-third of the blossoms of the former are turned brown. Clover ought not to lie long in the swath, but be cocked up quickly and allowed to cure. Orchard grass when cut early is very nutritious and highly relished by all kinds of stock; but when fully ripe it is woody and hard to digest.

Wheat Harvest.—Do not delay to have your preparations all made in advance, so that machines, animals, hands and supplies will be at hand when needed. It is false economy to delay in this and in not having ample labor to push your work promptly forward.

Ores Received.

The specimens of ores received from one of our subscribers in Carroll Co., Md., are all quartz and micacious shist. One of the specimens contains a *small speck* of yellow sulphuret of copper, (copper ore). The rest of the specimens were treated for gold but they did not contain a trace of that precious metal, and no other metal or valuable substance is present. LEHMANN & MAGER.

A Profitable Cow.

An illustration of the profitableness of buying the best stock is shown in the experience of Mr. T. Alex. Seth with the Jersey cow, Arawana Buttercup. She was bought by him May 29th, 1880, for $350. June 11th, 1880, he sold her calf for $250, and May 28th, 1881, another for $300, thus within a year making a profit of $200, and the cow clear, she having in the meantime given 50 lbs. of milk per day, and made since her last calf at the rate of 15 lbs. 5 ozs. of butter per week.

The American Farmer.

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SAMUEL SANDS, }
WM. B. SANDS, } - Editors and Publishers.

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*** Subscribers who have minerals, ores, marls, fertilizing materials, or other substances, will be advised through our pages, by competent chemists, as to their composition, uses and value, by forwarding specimens to this office, *expressage or postage prepaid*. Questions as to application of chemical science to the practical arts will also be answered.

*** Persons desiring information or advice on diseases or injuries of domestic animals, will receive replies from a competent Veterinary surgeon, by giving a plain statement of the symptoms, &c.

*** Microscopical examinations will be made by an expert of fungous growths and other objects sent.

BALTIMORE, JUNE 1, 1881.

Subscription Bills.

Our thanks are due to those of our subscribers who have during the month complied with our request for attention to the bills enclosed in the May number, and their example we shall be glad to have followed, as promptly as may be convenient, by those who have so far neglected or overlooked our moderate but equitable demands.

Horticultural Improvements.

All who have experience with, or who have closely observed horticultural work, know that altering or remodeling to produce satisfactory effects is a more difficult task than to begin a new place and carry out any well projected plan of improvement, and that in the end the result is generally unsatisfactory and of a patch-work-like character. This comes, as a rule, from the difficulty encountered in changing roads and removing, or adapting to changed views, specimens and groups of trees, which, having become established, maintain themselves as conspicuous features of the landscape.

A notable example which forms an exception to the rule, and where, by the fortunate combination of skill, judgment, and good taste, a most marked improvement has been so happily effected as to leave few blanks or raw places to show the alterations, is at "Burnside," the country seat of Mr. Samuel M. Shoemaker, in Green Spring Valley, in Baltimore county. Exceptionally eligibly situated as to prospect and surroundings, and especially fortunate that the ample boundaries of the farm give room for great variety of embellishment and a noble view, the many really fine trees, thickly planted, had come to be so cherished that it was deemed almost a sacrilege to thin out or destroy them.

Mr. Oscar Rücklefsen, the gardener in charge, undertook the remodeling of the grounds, his plan offering in place of the crowded lawn on which were planted too many ornamental and fruit trees, to present a beautiful expanse of unbroken greensward; and instead of the contracted roadway a drive of ample sweep and graceful contour, the course of which from the highway was wholly changed.

These changes involved the removal during the winter, by the frozen ball system, of some seventy trees, embracing not only evergreens, with which it is more easily accomplished, but also deciduous trees, notably maples and tulip poplars, one of the latter being of the diameter of at least eighteen inches and seventy feet high. Many groups of evergreens, obstructing pleasing views, were removed, and replanted to the north and northeast of the dwelling. These operations required a large force and the construction of machinery for the especial purpose, and have been crowned with entire success. The change in the approach made corresponding alterations essential in the immediate surroundings of the house. The carriage-way is now led around to the side, and a broad terrace constructed in front of the house, gracefully sloping down to the new lawn, paved with large slabs of slate, and reached by a flight of granite steps, beautifully proportioned and imposing by its solidity and extent. This terrace has at once improved the architectural effect of the building by diminishing its apparent height; and, by giving an opportunity

for planting a row of shade trees to break the ardor of the southern sun, added to its comfort.

A hill intervening to break a charming vista down the valley, it was determined to reduce it some ten feet, and the earth being needed to fill a depression in the new lawn, the task was not so heavy as a long haul would have made it, and a marked improvement is effected at an almost trifling expense.

In all the changes made the main object kept in view was to give near the dwelling abundance of green grass—no glaring reflection from a roadway directly in its front—nothing but soft green color and the waving branches of symmetrical shade trees. Even the flower beds are banished to the vicinity of the glass houses. These, also lately largely extended, now afford accommodation for almost every species of desirable plants, and bear testimony to the skill of Mr. Röcklefsen as a cultivator as his well-wrought effects outside do to his taste in landscape gardening. Some notable orchids of rare families, such as the East India Vandas, are now about in their glory, and are well worth inspection by those interested, who are cheerfully welcomed by the gardeners in charge.

Mr. Shoemaker is contemplating further improvements, including a new model stable for his choice herd of Jersey cattle, all of which when finished will make "Burnside" one of the most complete, as it is by nature one of the most beautiful places in this vicinity.

Death of an Old Subscriber.

We have but lately learned of the death last winter of Robert Chisolm, Esq., late of Charleston, and formerly of Beaufort District, South Carolina, who was one of the earliest subscribers to the *American Farmer*, he beginning with its first volume in 1819, and retaining a friendly interest in it and contributing to its pages up almost to the day of his death. Mr. Chisolm was conspicuous for his zeal for and knowledge of horticulture, in every branch of which he seemed to have wide experience. His orchards and plantations were extensive, and very profitable by the example they approved themselves to other cultivators. The trees in his first orchard of pears were all many years ago selected by him in person in France, whence also he had many other varieties of fruit and ornamental trees. He was fond of experimenting and testing new plants, and his successes with them have been from time to time given to the public through the pages of the *Farmer*.

Acknowledgments.

Gen. L. Giddings, of Anne Arundel, has kindly forwarded to us a case of Ives and Clinton Wines from his severn Vineyard, showing, as we think, a decided advance in quality over any we have yet tested from that generous source. The demand for American wines is largely on the increase, and we hope and expect to see those grown on our Maryland soils take high place among them.

To Mr. John Saul, of Washington, D. C., we are indebted for a box of handsome plants, including many new sorts, which will help materially in making our garden gay through the summer, and for which he has our appreciative thanks.

Mr. R. S. Cole, Harmans, A. A. Co., Md., sends us a basket of Miner's Great Prolific Strawberries, very handsome, large, and fine flavored. This variety he has selected out of some sixty sorts for its great productiveness, uniformly large size and adaptation to all soils.

U. S. Commissioner of Agriculture.

In the place of General Le Duc, the President nominated and the Senate promptly confirmed Dr. George B. Loring, of Massachusetts, as Commissioner of Agriculture. Dr. Loring has long been conspicuously identified with the agricultural interests of his State and New England; he is a man of liberal education and varied attainments; and whilst probably not possessed of great practical acquaintance with agriculture, he has ingenuity enough to know what is demanded of his Department and the ability to direct it into profitable and practical operations.

Extensive Sale of Hereford Cattle.

Dr. W. H. DeCourcy, of Queen Anne's, Md. has recently sold to Mr. Frank Price, of Chicago, to go to Nebraska, thirty-two head of Herefords, some thoroughbreds and some grades, bred by himself or by Mr. VanDyke and other gentlemen to whom he had sold Hereford bulls.

Gen. Hardcastle and Col. Ed. Lloyd, of Talbot, have sold to the same party other lots, for the same destination, where the males will be used in the herds to increase the size of the native cattle. The animals were all inspected previous to shipment by Dr. Cressy, Professor of Veterinary Science in the Massachusetts Agricultural College, and found free from any suspicion even of Pleuro-pneumonia.

Maryland Horticultural Society.

The May Show on the 4th was one of the most meagre, both as to exhibits and visitors, of any the Society has ever held in that month. Whether this was due to the date chosen being unpropitious or merely to accident is not known.

The following awards were made: Best six Dracænas, $2, Robert J. Halliday; best six Fuchsias, $2, best twelve Verbenas, $1, Robert Patterson; best three Petunias, $1, best twelve Zonale Geraniums, $2, best six double Geraniums, $2, Richard Cromwell; best six Pelargoniums, $2, best twelve greenhouse or stove plants, $5, best six ornamental foliage plants, $3, R. W. L. Rasin; best collection blooms of hardy flowering shrubs, $2, W. D. Brackenridge; best basket of cut flowers, $3, John Cook; best hand boquet, $2, Miss Allison Patterson. To Charles Hamilton for Amaryllis, special prize, $2. *Amateur.*—Best collection Pansies, $1, Lizzie Patterson; best three Zonale, $1, best three double Geraniums, $1, best hanging basket, $1, Willie Christie.

At the meeting of the Society, Mr. Wm. T. Sedgwick, of the Johns Hopkins University, delivered an able address on the Life History of Ferns, and a vote of thanks was given him therefor.

Harvesting Machines.

We renew our recommendation that no time be lost in getting such machines as have been decided upon for cutting and saving the crops, and in this connection we refer to the advertisements of the Buckeye Machines, the old favorite styles and the new Self-Binder, advertised by C. Aultman & Co.; W. A. Wood's Machines, by T. Norris & Son; the Kirby and Wheeler and Osborne Machines, by Joshua Thomas, and the McCormick Harvesters, by Griffith & Turner, all of which stand high for effective work.

VEGETABLE PLANTS.—Persons in need of these are referred to the advertisement of Mr. R. Vincent, Jr., who makes a specialty of their production, and the magnitude of whose operations in this line may be calculated from the fact that he sowed this season about sixty pounds of cabbage seed.

WE TAKE pleasure in calling attention to the advertisement of Mr. O. F. Bresee's sale of pure bred Short-Horn Cattle, to take place June 8th. Mr. Bresee's reputation as a breeder of fine cattle is so well known that we are sure all in want of Short-Horns will be well paid by attending the sale.

Baltimore Co. Farmers' Convention.

This meeting was held on May 19, but a heavy rain that day and the one previous reduced the attendance, which had promised to be very large. The following gentlemen were the officers of the meeting: President, C. Lyon Rogers; Vice-Presidents, Samuel M. Price, Thomas Craddock, Jno. A. Conkling, Granville Matthews, Rev. Jacob Shamberger, C. Howard Shipley, Gotleib Stengel; Secretaries, Wm. Fell Johnston, Wm. B. Sands.

Addresses were deliverd by Dr. M. G. Ellzey, late Professor of Practical and Scientific Agriculture at the Virginia Agricultural College, and by Dr. R. P. Lord, V. S. A paper on Ensilage, by Charles K. Harrison, Esq., who was unable to be present, was read by the Secretary. The thanks of the meeting were tendered the authors of these addresses, all three of which are given in full elsewhere in this number of the *Farmer*.

The questions set for consideration were not discussed.

Messrs. Griffith & Turner had a large and interesting display of farm machines and implements, and were the only exhibitors on the ground, the heavy rains having deterred all others.

The No-Water Theory. (?)

Desiring to throw more light on the no-water for chicks theory, (?) in order to satisfy Mr. Hooper, and any other unbelievers, and understanding that Mr. A. C. Hawkins, of Lancaster, Massachusetts, who is the most successful poultry breeder in the United States, was or had been trying the process, I addressed a note to him, requesting him to be kind enough to inform me if he had tried the process and what his success was. The following was his reply:

LANCASTER, MASS., May 29, 1881.

DEAR SIR:—Have raised this season about 7,000 Plymouth Rock chicks—*all* without drink till 4 weeks old. Never had better success.

Truly, A. C. HAWKINS.

Dr. Cairnes says:—In 1880 my early chicks all died. I was at a loss for a cause. During the later spring and summer of same year I noticed the "no-water process" spoken of, and made up my mind to try it the next season this year, (1881.) I gave no water until chicks were four or five weeks old. Have lost none from loose bowels, my chicks are all thrifty and grow like weeds, which I attribute to withholding water, as the other managemcnt was just the same.

Woodberry, Md., June 1, '81. G. H. CAIRNES.

Thus it will be seen Mr. H.—though like Mr. Hooper, a Plymouth Rock specialist—did succeed to his satisfaction. I hardly think this result can be consistently classed an "*uncertain experiment*"—but deem it a "*proved fact*," and still claim if fed *properly mixed food*, chicks thrive and are better without water for the first four weeks. I hope another season breeders will try it. Did space permit, I could advance a lengthy argument in favor of the system, which is based entirely upon personal experience, which *converted* me to the theory, for I was loth to believe in it at first, but after reflection I saw sufficient reasons to induce me to try it. G. O. B.

Co-operation.

Messrs. Editors American Farmer:

An article signed "A" in your last issue strikes the key-note of the situation, and I thank the writer for it, and if this should meet his eye I would like to have his name and a letter from him on the situation. This very question has long troubled my brain, and it is one which demands the most profound interest, study and action of our people, and it is a subject pertinent to the best interest of your journal, for you are one of the champions and defenders of nature's noblemen—the tillers of the soil—from whom spring all the revenues of trade.

I suggest the formation of a society, to be called "The National Labor Band of Brothers," ignoring all party or sectional lines; the membership to consist only of those who are producers, and, if capitalists, only such as are using their means for the general welfare, and not for the advancement of great personal and selfish interests. No member being allowed to buy in large quantities any article for speculation, creating thereby a disturbance of values, but to let supply and demand only be the true standard of values. The accumulation and combination of capital has made such gigantic strides in the last five years that I venture to affirm that fifty men can be named in the United States who can on combination control the price of every article of prime necessity, buy up the controlling power of every State Legislature, and even Congress, and so disturb the normal condition of trade as to hold in absolute financial bondage nine-tenths of the people. And yet the unthinking, unreflective thousands move on with the diurnal revolution of the earth, looking no further than the labor and necessities of the coming morrow. We make no war upon capital *per se*, but only upon its abuse in speculation and the burdens it imposes upon the hard earned money of the producing classes, and the upsetting by combination the chief avenues of trade. Let the work commence at once in districts, counties and states, with a head bureau at some great national centre, Indianapolis being a good and ready and accessible point. JOHN W. THORNE.

Halifax Co., N. C., May 14, 1881.

[The grange offers an association already at hand, so far as the farmers are concerned, organized for the end our correspondent suggests, and so long as they fail to avail of its far-reaching opportunities for co-operation it is vain to talk of new societies.—*Eds.*]

Raising Beef in Maryland.

Editors American Farmer:

This subject should claim the attention of the farmers of Maryland to a much greater extent than it does at this time. In years gone by, it may have been wise economy to depend upon the West and Southwest for our stock cattle and beef, and it may have been well directed judgment on the part of our forefathers to let the West furnish the grain, beef, and pork for the world, while we in Maryland were supplying our local markets with hay, fruit, potatoes, the smaller vegetables, &c. This arrangement I think should remain in full force, with the exception of our accounts being credited with more beef and less hay. In these days of through railroads to all Eastern cities, which bring the immense granaries of the rich lands of the West into competition with our weaker lands, which have to be continually fed with fertilizers, and with the improved beater and hydraulic press hay can be freighted one to two thousand miles as cheaply as we can wagon it twenty to twenty-five miles, I think a large portion of our farmers who are not in the dairy business, would improve their condition by substituting home raised beef, for at least a portion of the hay crop. Beef is a recognized necessity as food for the multitude, both for home consumption, and for export; the demand is increasing yearly, and the price has kept up through the times of depressed values better than any other farm production.

While England continues to grow in population and her farming lands to grow less; now that she has become educated to a point beyond prejudice, and is able to see that this country can supply her markets in unlimited quantity, with the best of beef at a price less than she can produce it at home, this fact alone, will create an increased demand, and keep the price up. Beef could not be reared as cheaply here, as on the rich grass lands of south-west Virginia, or as that which comes from the broad prairies of the West, but the advantage of near-by markets would overcome this to a great extent.

The importance of using a thoroughbred shorthorn bull should not be overlooked, as grade steers or spayed heifers of this breed could be made to weigh 1000 to 1200 lbs. at two and a half years, when ordinary common stock would not weigh over 700 to 900 lbs. This is said to be the most profitable age to sell at, as there is less gain for the amount of food consumed in the succeeding year. Any good farm of 150 acres could turn off 12 cattle a year that would bring $600, and keep up the regular rotation of crops, and if no more money was taken in there certainly would be less labor, and much less exhaustion to the farm. The age to sell at could be regulated by the amount of pasture and winter feed. If sold at two and a half years there would be but 24 cattle to winter, and half of them six months old calves, with a necessary supply of cows for family use. Good calves could always be procured for raising, in any neighborhood by those that are interested to see that nothing but thoroughbred bulls were used.

If ensilage comes into general use, as I believe it will, the number of cattle could be greatly increased, as this would be most nutritious feed for growing stock and would furnish a large amount of food from a small acreage.

Montgomery Co., Md. A. M. STABLER.

MANY LOSE THEIR BEAUTY from the hair falling or fading. Parker's Hair Balsam supplies necessary nourishment, prevents falling and grayness and is an elegant dressing. *

Baltimore Markets—May 31.

Breadstuffs.—*Flour.* The market was quiet, but prices firm. We quote as follows: Howard Street Super $3.50 @ 4.00; do do Extra $4 20 @ 5.00; do do Family 5.25 @ 6 25; Western Super 3.50 @ 4 00; do Extra 4.25 @ 5.00; do Family 5 40 @ 6 35; City Mills Super 3.50 @ 4 00; do do Low and Medium Extra 4 50 @ 5.00; do do Rio brands Extra 6.62½ @ 6.75; Spring Wheat Family 5.25 @ 6.00; Patapsco Family 7.25; do Extra 7.05; Chesapeake Extra 6.85; Orange Grove Extra 6.25; Fancy brands 6.75 @ 7.50; Colbert's Excelsior Graham 7.25; Fine 3.00@3.25; Rye Flour 5.50@5.75.

Wheat.—For the better grades of Southern there was a good demand, but lower grades were dull. For Western the market was firm and prices higher. We quote Southern at 1.25 @ 1 28 for Fultz, and 1.28@1.33 for long berry; 1.26½ @ 1.26¾ for spot and June; 1.24½@1.24¾ for July; $1.21½ @ 1.21¾ for August and 1.22 @ 1.22½ for September.

Corn.—The market was dull. We quote 58@58¼ cts. for spot; 56½@56¾ cts for June; 56½@56¾ cts. for July; Southern white 59@59½cts; do yellow, 58@58½ cts.

Oats.—The market for oats was dull and easier to-day. Quotations are as follows: Western mixed 47 cts.; do bright 48 cts.; do white 49 cts., and Pennsylvania 48 @ 50 cts

Rye.—No sales are reported, but we quote at $1.10 for prime.

Cotton.—The market is quiet but steady. We quote as follows: Middling 10¾ @ 11; Low Middling 10¼ @ 10¾; Strict Good Ordinary 9¼; Good Ordinary 9.

Hay and Straw.—The market is dull and prices are easy, as follows: Choice Cecil County Timothy $21@ 24; fair to prime Md. and Pa. Timothy $18@21; Western Hay $19@22; Mixed do $15 @ 17; Clover do $10. Loose Hay ranges in price from about $16 to 25 per ton Straw—Wheat $12@13; Oat do 13@15; Rye do $22.

Mill Feed.—Western Bran continues dull, selling to-day at $13 per ton City Mills Middlings are steady at $20, and Brownstuffs at $18 per ton

Provisions.—The market is quiet but steady, and we quote as follows: Bulk Shoulders 6¾ cts; L. C. Sides, 9¼ cts.; C. R. Sides, 9¾ cts.; Bacon Shoulders 7¾ cts.; C. R. Sides 10¼ cts; Hams, sugar cured 11½ @ 12¾ cts.; Shoulders, sugar cured, 8¾ cts.; Breasts 10 cts. Lard 12@ 12¼ cts. for refined. Mess Pork $17.50 for old and $18 ₹ bbl. for new. *Butter.*—With an increasing supply of prime fresh butter the market is easier and prices somewhat lower. Common grades are very dull. We quote as follows: Ill., Iowa, Mich. and Wis., selections, 20 @ 21 cts., medium, 18 @ 20 cts; Western Reserve do 18 @ 20 cts., do 17 @ 18 cts.; Southern Ohio and Indiana do 18 @ 20 cts., do 16 @ 17 cts.; W. Va. and other West do 19 @ 20 cts., do 16 @ 17 cts.; Near-by receipts do 12 @ 15 cts.; N. Y. State prime to choice do 22 @ 24 cts., do 17 @ 19 cts.; Choice Creamery do 24 @ 28 cts. *Cheese*—The market is dull and heavy, and prices are declining. We quote as follows: New York State choice 11 @ 11¼ cts; do good to prime 10 @ 10¾ cts.; Western choice 10@10½ cts; do good to prime 8 @ 9 cts. *Eggs*—The market continues firm, with an upward tendency in prices, and we now quote fresh supplies at 14¾ @ 15 cts. per dozen. *Potatoes.*—The market for old stock is dull, and prices are easy, as follows: 65 @ 85 cts. for Early Rose and Snowflake, and 70 @ 80 cts. for Peerless. *Rice.*—The market is quiet but steady. We quote Carolina at 5 @ 5¾ cts. for cemmon to fair, and 5¾ @ 6¾ cts. for good to prime. Rangoon is held at 2¾ @ 3 cts. per lb., in bond.

Live Stock.—*Beef Cattle.*—The market was fairly active, with a decline in prices on all grades of ½@¾ ct. The average quality of the offerings was good. We quote very best on sale 6½ @ 6 4-5 cts.; that generally rated first quality, 5¾ @ 6½ cts.; medium or good fair quality 4¾ @ 5¾ cts.; ordinary thin Steers, Oxen and Cows 3¾@4¾ cts.; extreme range of prices 3¾@6 4-5 cts.; most the sales were from 6¼ @ 6¾. *Milch Cows.*—The market is dull, and prices at wholesale $18@35 per head. *Hogs*—There is a fair supply and moderate demand. We quote at 7¾ @ 8¼ cts. *Sheep and Lambs.*—There is a falling off in the numbers as well as the quality of the offerings this week. The home demand is not active. The shipping demand from the East absorbs fully half the receipts, and but for it trade would be exceedingly dull. We quote Sheep at 3½ @ 5¼ cts., and Lambs at 5 @ 7¼ cts. gross.

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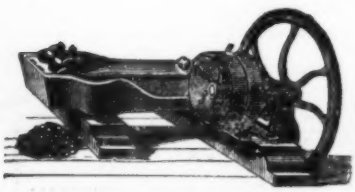

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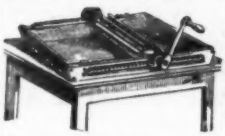

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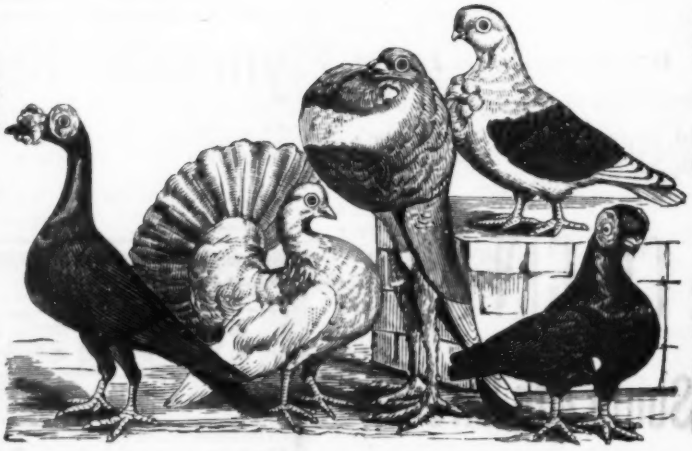

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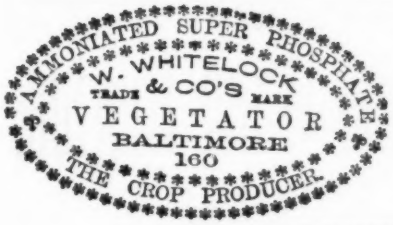

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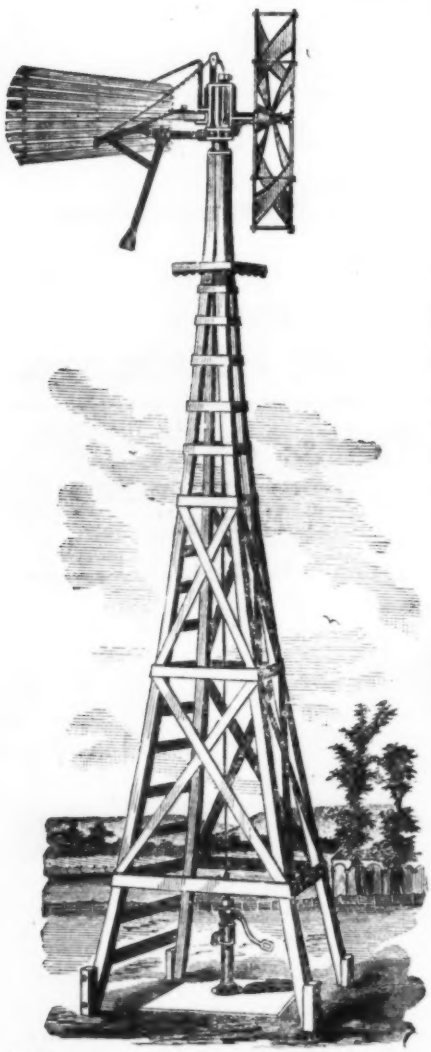

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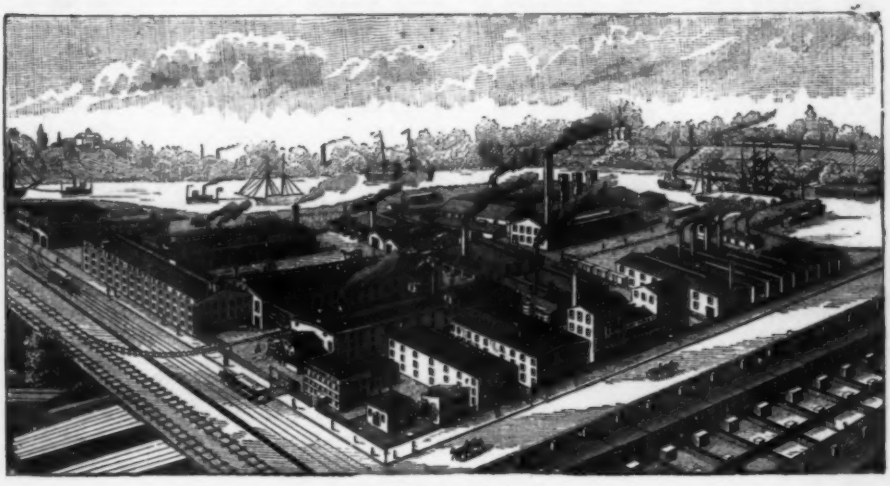

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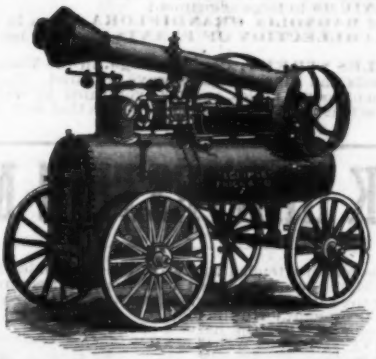

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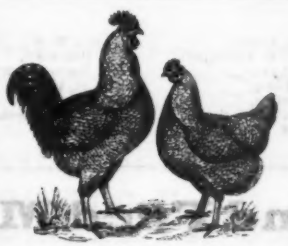

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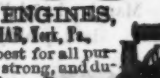

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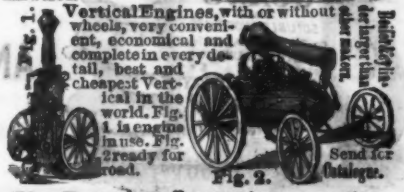

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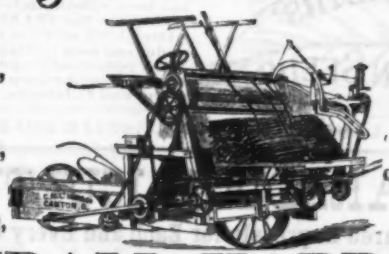

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Capacity for work, strength, durability and superior finish, paramount to all other considerations.

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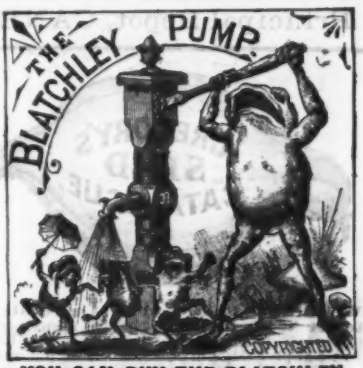

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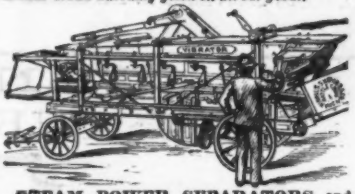

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